SEMESTER - IV

S. No.	Course Code	Level of Course	Title of the Course	Sessions			Marks			Credits
				Theory	Practical	Total	CA	SEE	Total	
1	MBG202	Foundation Compulsory	Environmental Science	3	-	3	40	60	100	3
2	MAN202	Core	Data ware-housing and OLAP	3	-	3	40	60	100	3
3	MAN204	Core	Operations Research	4	-	4	40	60	100	4
4	MAN206	Core	Predictive Analytics and Decision Making	4	-	4	40	60	100	4
5	MAN222	Core	Introduction to R	1	2	3	100	-	100	2
6	MBG206	Core	Financial Management	4	-	4	40	60	100	4
7	MAN292	Core skill building	Semester end Viva Voce	-	-		50		50	1
			Total	**19**	**2**	**21**	**350**	**300**	**650**	**21**

Note: T- Theory Exam; P – Practical Exam

PROFESSIONAL COMPETENCY DEVELOPMENT COURSES

S. No.	Course Code	Level of Course	Title of the Course	Sessions			Marks			Credits
				Theory	Practical	Total	CA	SEE	Total	
1	MBG352	Foundation Elective Skill Baed	Business English Certificate (BEC)	-	2	2	50	-	50	1
2	MBG354	Foundation Elective Skill Based	Soft Skills	1	1	2	50	1	50	1
			Total	**1**	**3**	**4**	**100**	**-**	**100**	**2**

Note : Professional Competency Development courses credits will be added in the 6th Semester

Prac.: Practicals, CA : Continuous Assessment, SEE : Semester End Examination

MBG202: ENVIRONMENTAL SCIENCE

INTRODUCTION

The importance of environmental science and environmental studies cannot be disputed. The need for sustainable development is a key to the future of mankind. Continuing problems of pollution, loss of forests, solid waste disposal, degradation of environment, issues like economic productivity and national security, Global warming, the depletion of ozone layer and loss of biodiversity have made everyone aware of environmental issues. It is clear that no citizen of the earth can afford to be ignorant of environment issues. Environmental management has captured the attention of health care managers. Managing environmental hazards has become very important.

OBJECTIVES

1) To sensitize students to environmental issues
2) To mobilize them to adopt environment conservation strategies as management professionals.

LEARNING OUTCOMES

1) Creating environmental consciousness among students
2) Enabling them to identify potential environmental hazards and to provide management solutions to such problems

SYLLABUS

UNIT I:

Multidisciplinary nature of environmental studies:
Definition, Scope and importance, need for public awareness

UNIT – II:

Natural resources and associated problems

a) *Forest resources*: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people.
b) *Water resources*: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
c) *Mineral resources*: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
d) *Food resources*: World food problems, changes caused by agriculture and over-grazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

e) *Energy resources*: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. Case studies.

f) *Land resources*: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.

Role of an individual in conservation of natural resources

Equitable use of resources for sustainable lifestyles

UNIT III:

Ecosystems

Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers, Energy flow in the ecosystem, Ecological succession, Food chains, food webs and ecological pyramids.

Introduction, types, characteristic features, structure and function of the following ecosystems:

- Forest ecosystem
- Grassland ecosystem
- Desert ecosystem
- Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

From Unsustainable to Sustainable development, Urban problems related to energy, Water conservation, rain water harvesting, watershed management, Resettlement and rehabilitation of people; its problems and concerns.

Environmental ethics: Issues and possible solutions

Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, Wasteland reclamation, Consumerism and waste products, Environment Protection Act, Air (Prevention and Control of Pollution) Act,Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation, Public awareness

UNIT IV:

Biodiversity and its conservation

Introduction – Definition: genetic, species and ecosystem diversity, Biogeographical classification of India

Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values, Biodiversity at global, National and local levels, India as a mega-diversity nation, Hot-sports of biodiversity.

Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts.

Endangered and endemic species of India

Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

Unit V: Environmental Pollution

Definition, Cause, effects and control measures of:

Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, nuclear hazards

Solid waste Management: Causes, effects and control measures of urban and industrial wastes

Role of an individual in prevention of pollution

Pollution case studies

Disaster management: floods, earthquake, cyclone and landslides.

Population growth, variation among nations, Population explosion – Family Welfare Program, Environment and human health, Human Rights, Value Education, Women and Child Welfare, Role of Information Technology in Environment and human health.

FIELD WORK

Visit to a local area to document environmental assets river/ forest/grassland/ hill/mountain

Visit to a local polluted site-Urban/Rural/Industrial/Agricultural

Study of common plants, insects, birds.

Study of simple ecosystems-pond, river, hill slopes, etc.

TEXT BOOK

1. Erach Bharucha (2013), *Textbook of Environmental Studies for Undergraduate Courses* Second Edition, Hyderabad: Universities Press.

REFERENCE BOOKS

1. Townsend C.R., Begon, M & Harper J.L (2008), *Essentials of Ecology* Third Edition, United Kingdom, Oxford: Blackwell Publishing.
2. Jadhav H.V & Bhosale V.M (2006), *Environmental Protection & Laws*, Mumbai: Himalaya Publishing House.

*Latest Available editions

JOURNALS

1. GITAM Journal of Management, GITAM Univeristy, Visakhapatnam
2. The ICFAI Journal of environmental economics
3. The ICFAI Journal of Environmental Law
4. Indian Journal of Environmental Protection
5. Journal of Environmental Research and Development
6. Down to Earth magazine, Society for Environmental Communications, New Delhi

MAN202: DATA WAREHOUSING AND OLAP

INTRODUCTION

As the business grows, amount of data that is accumulated over the years and in different sources will also grow. Traditional databases may not be efficient to store and handle such data and thus requires a specialized data store referred to as data warehouse that can store integrated and historical data of an organization. The data can then be analysed in different views through OLAP methods to gain more insight from it.

OBJECTIVES

1) To acquaint the students with the features and building of a data warehousing.
2) Gain an insight on the concept of OLAP and its application

LEARNING OUTCOMES

1) Understand the concept of data warehouse and its benefits
2) Plan a data warehouse as per the requirement of a business
3) Understand the different OLAP models and choose the appropriate one as per the need

SYLLABUS

UNIT – I

Introduction to data warehousing: Definition, Benefits of a data warehouse, Features of data warehouse, Data Granularity, Information flow mechanism, Metadata and its importance, Data warehouse Architecture, Data marts Concept, Building data marts, Issues in data marts

UNIT – II:

Planning a Data warehouse: Determining the end-user requirements, requirement gathering methods, requirement analysis, dimensional analysis, Information Package Diagrams (IPD), Data warehouse project plan, Economic Feasibility Analysis

UNIT – III:

Data warehouse Schema and Modeling: Dimensional Modeling, Star Schema, Snowflake Schema, Aggregate Tables, Fact Constellation Table, Dimensional Table, Fact Table, Keys in Data Warehouse

UNIT- IV:

ETL Process and Maintenance of Data Warehouse: Data Extraction, Data Transformation, Data Loading, Data Quality, Data warehouse design review, Testing, Monitoring the Data warehouse

UNIT – V:

OLAP in Data Warehouse: Concept of OLAP, Multidimensional Analysis, OLAP functions, OLAP Applications, OLAP Models – MOLAP, ROLAP, HOLAP, DOLAP, OLAP Design Considerations.

TEXT BOOK

1. Thareja, R. (2013), *Data Warehouse*, New Delhi: Oxford University Press.

REFERENCE BOOKS

1. Laberge, R. (2011), *The Data Warehouse Mentor- Practical Data Warehouse and Business Intelligence Insights*,. New Delhi. Tata McGraw Hill.
2. Prabhu, C.S.R. (2013), *Data warehousing: Concepts, Techniques, Products and Applications*, New Delhi: Prentice Hall of India.

JOURNALS

1. Information Technology, New Delhi
2. Computers Today, New Delhi

MAN204: OPERATIONS RESEARCH

INTRODUCTION

Operations Research is a widely accepted discipline that deals with the application of advanced analytical methods to help make better decisions. This method helps to derive optimal or near-optimal solutions to complex decision-making problems. Gaining an insight into the structures and processes that Operations Research can offer and the practical utility of these techniques in Business would be an asset to the future managers.

OBJECTIVES

1) To understand the mathematical models used in Operations Research
2) To apply these techniques constructively to make effective business decisions

LEARNING OUTCOMES

1) Solve Linear programming problem
2) Solve Transportation and Assignment Problems
3) Understand the usage of game theory and simulation for solving business problem

SYLLABUS

UNIT I:

Introduction: Nature and meaning of Operations Research, Management applications of Operations Research, main characteristics of Operations Research, scope of Operations Research, role of Operations Research in decision making.

Unit II:

Linear Programming Problem: Introduction, mathematical formulation of LPP, general Linear Programming problem, Graphical Solution of LPP, Canonical and Standard Forms of LPP, solving LPP by Simplex Method.

Unit III:

Transportation & Assignment Problems: Introduction of transportation problems, procedures of finding basic feasible and optimal solution – NW corner rule, minimum cost method, Vogel's Approximation, MODI method, Assignment Problem - introduction, solving of Assignment problem by Hungarian Algorithm.

UNIT IV:

Game Theory and Simulation: Game theory: Introduction, Two Person Zero Sum Games, Pure Strategies, Dominance Principle, Graphical; Simulation: introduction, types of simulation, generation of random numbers, Monte Carlo Simulation, and waiting lines.

UNIT V:

Network Scheduling by PERT / CPM: Introduction, network and basic components, logical sequencing, rules of network construction, Critical Path Analysis, probability considerations in PERT, distinction between PERT and CPM.

TEXT BOOK

1. Sharma, J.K. (2010), *Operations Research Theory and Applications*, New Delhi: Macmillan India limited.

REFERENCES BOOKS

1. Sharma, S.D. (2012), *Operations Research*, Meerut: Kedar Nath Ram Nath & Co.
2. Hillier. F.S., & Lieberman, G.L. (2014), *Introduction to Operations Research - Concepts and Cases*, New Delhi: Tata McGraw Hill.

JOURNALS

1. GITAM Journal of Management, GIM, GITAM University, Visakhapatnam
2. International Journal of Operations and Quantitative Management, College of Business, Prairie View A&M University, USA
3. Journal of Applied Statistics, Routledge, Taylor & Francis Group, UK

MAN206: PREDICTIVE ANALYTICS AND DECISION MAKING

INTRODUCTION

Predictive Analytics is a discipline that deals with the application of statistical and machine learning techniques on historical data to predict future outcomes. In this competitive age, predictive analytics not only helps in making informed decisions and solve business problems but also to have an edge over the competitors.

OBJECTIVES

1) To understand the basic statistical techniques required for forecasting
2) To apply these techniques constructively to make effective business decisions

LEARNING OUTCOMES

1) Solve forecasting problems
2) Make effective decisions using statistical techniques

SYLLABUS

UNIT I:

MultipleCorrelation Analysis:Introduction, Significance of multiple correlation, Multiple and partial correlation, Relation between multiple and partial correlation coefficients.

UNIT II:

MultipleRegression Analysis: Introduction, Significance of Multiple Regression Analysis, Estimating the parameters ofMultiple Regression by method of Least Squares and Using Regression Coefficient methods,Relation between partial regression coefficients and correlation coefficients, Standard Error of Estimates for Multiple regression.

UNIT III:

Forecasting Trend: Introduction, Linear trend model, Exponential trend, Measurement of Seasonal effects – Method of Simple Average, Ratio-to-Trend Method, Ratio-to-Moving Average Method,Link Relative Method.

UNIT IV:

Hypothesis Testing: Introduction, Types of Hypothesis, Hypothesis Testing Procedure, One sample and Two sample Test for Mean (Students t-distribution

and Z-test); Introduction to Chi-Square distribution, Chi-Square test for Goodness of fit and for Independence of Attributes.

UNIT V:

Analysis of Variance: Introduction, Testing equality of population means (One –Way Classification), Testing equality of population means (Two –Way Classification)

Note: Proofs of theorems and derivations of problems and distributions are excluded.

TEXT BOOK:

1. J. Joseph Frrancis (2015), *Business statistics*, New Delhi: Cengage Learning.

REFERENCES BOOKS

1) Bruce L. Bowerman, Richard T.O'Connell, Emily S. Murphree (2015), *Business Statistics in practice*, New Delhi: McGraw Hill Education (India) Private Ltd.

2) David M.Levine, david Stephan Timothy C.Krehbiel, Mark l Berenson (2015), *Statistics for managers using Microsoft Excel*, New Delhi:Prentice Hall India Pvt.

3) Amir D.Aczel, Jayavel Sounderpandian (2015), *Complete Business Statistics*, New Delhi:Tata McGraw Hill.

4) S.P. Gupta &M.P. Gupta (2015), *Business Statistics*, New Delhi: Sultan Chand & Sons.

JOURNALS

1) GITAM Journal of Management, GIM, GITAM University, Visakhapatnam

2) International Journal of Operations and Quantitative Management, College of Business, Prairie View A&M University, USA

3) Journal of Applied Statistics, Routledge, Taylor & Francis Group, UK

MAN222: INTRODUCTION TO R

INTRODUCTION

R is an open source programming language for statistical computing and graphics. R has found huge acceptance from the data scientists' community and is being widely used by the statisticians and data miners for data analysis.

OBJECTIVES

1) Understand the programming concepts of R
2) Gain hands on experience in working with R

LEARNING OUTCOMES

1) Write basic programs in R language
2) Use built in packages to enhance the program
3) Perform data visualization with R

SYLLABUS

UNIT – I:

Introduction to R: Concept of R, Installing R, IDE of R, Getting help from R, Mathematical Operators and Vectors, Assigning Variables, Special Numbers, Logical Vectors, Classes, Different types of numbers, Changing classes, Examining Variables, The workplace

UNIT – II:

Elements in R: Vectors – Sequences, Lengths, Names, Indexing Vectors, Vector Recycling and Repetition, Matrices and Arrays – Creating Arrays and Matrices, Rows, Columns, Dimensions, Indexing Arrays, Combining Matrices, Array Arithmetic, Lists – Creating lists, Automatic and recursive variables, List dimensions and arithmetic, indexing lists, Conversion between vectors and lists, Combining lists, NULL, Pairlists, Data Frames – Creating Data Frames, Indexing Data Frames, Basic Data Frame Manipulation

UNIT – III:

Functions, Strings and Factors: Environments, Functions – Creating and Calling Functions, Passing functions, variable scope, Strings – Constructing and printing strings, Formatting numbers, Special characters, Changing case, Extracting Substrings, Splitting Strings, File paths, Factors – Creating, factor levels, ordered factors, conversion of variables

UNIT – IV:

Flow Controls: Conditional – if and else, Vectorized if, Multiple Selection, Loops – repeat loops, while loops, for loops, Advanced looping – replication, looping over lists, looping over arrays, Multiple – Input Apply, Instant vectorization, Split-Apply-Combine

UNIT –V:

Packages and Visualization: Loading packages, search path, libraries and installed packages, installing packages, maintaining packages, Visualization – The three plotting systems, Scatterplots – base graphics, lattice graphics, ggplots, Line Plots, Histograms, Box Plots, Bar Charts, Other plotting packages and systems

TEXT BOOK

1. Cotton, R. (2014), Learning R, Mumbai : O' Reilly India / Shroff Publishers.

REFERENCE BOOKS:

1. Teetor, P. (2014), R Cookbook, Mumbai: O' Reilly India / Shroff Publishers.
2. Gardener, M (2013), Beginning R, New Delhi: Wiley India.

JOURNALS

1. Information Technology, New Delhi
2. Computers Today, New Delhi

MBG206: FINANCIAL MANAGEMENT

INTRODUCTION

Finance is the life blood of the business. Financial Management is one of the key areas of management. This Course helps in understanding of the fundamentals of financial management in terms of investment; financing and dividend policy. This course is designed to familiarize the students with the basic concepts and practices of Financial Management.

OBJECTIVES

1) To familiarize the students with the basic concepts of Financial Management.
2) To give thorough understanding of the practices of basic Financial Management.

LEARNING OUTCOMES

After completing this course the students should be able to –

1) make optimum decisions pertaining to raising funds, making investments and managing the assets of a corporation, big or small.
2) Learn to manage finances with the ultimate goal of creating value.

SYLLABUS

UNIT I:

Financial Management : An Introduction

Meaning and Definition of financial Management, Goals of Financial Management, Finance Functions, Organisation of finance function, Interface between Finance and other business functions, Financial Planning, Steps in Financial Planning, Factors Affecting Financial Plans, Time Value of Money.

UNIT II:

Investment Decisions

Introduction to Capital Budgeting, Importance of capital Budgeting, Capital Budgeting Process, Techniques of Capital Budgeting - Accounting Rate of Return, Pay Back Period, Net Present Value, Internal Rate of Return and Profitability Index.

UNIT III:

Financing Decisions

Cost of Capital - Cost of Debt, Cost of Preference Shares, Cost of Equity Shares, Cost of Retained Earnings, Weighted Average Cost of Capital;

Leverages – Introduction – Types of Leverages – Measurement of Operating Leverage, Financial Leverage and Combined Leverage ; Capital Structure – Introduction, Features of Ideal Capital Structure, Factors affecting Capital Structure, Theories of Capital Structure - Net Income Approach, Net Operating Income Approach, Modigliani and Miller Approach and Traditional Approach

UNIT IV:

Working Capital Management - Introduction – Concepts of Working Capital, Objective of Working Capital Management, Need for Working Capital, Operating Cycle, Determinants of Working Capital, Estimation of Working Capital.

UNIT V:

Dividend Decisions - Introduction, Forms of Dividends, Types of Dividend Policies, determinants of Dividend Policy -Theories of Dividend Policy - Walter Model, Gordon Model, Modigliani and Miller Model – Bonus Shares and Stock Split – Legal, procedural and Tax Aspects of Dividend Policy.

TEXT BOOK

1. M.Y. Khan & P.K. Jain. (2013), *Financial Management.* New Delhi: Tata McGraw Hill.

REFERENCE BOOKS

1. I.M. Pandey (2010), *Financial Management,* New Delhi: Vikas Publications.
2. R.K. Sharma & Shashi K. Gupta (2014), *Financial Management.* Ludhiana: Kalyani Publications.

JOURNALS

1. Chartered Financial Analyst - ICFAI - Hyderabad.
2. GITAM Journal of Management, Visakhapatnam.
3. Journal of Financial Management and Analysis - Centre for Financial Management Research.

MBG352: BUSINESS ENGLISH CERTIFICATE

INTRODUCTION

The world may be getting smaller, but people still speak different languages. International trade and business needs a common language and as all are aware, that place has been taken by English language. However, the words of business are different from everyday use so it's not really something every one picks up intuitively.

Business English Certificate (BEC) programme is one of the value added programme offered by GITAM Institute of Management in collaboration with University of Cambridge and British Council. BEC is used by hundreds of employers, either as part of their staff development programme or as a qualification that they look for when recruiting staff. BEC is a globally recognized qualification and it enhances the job prospects and adds value to the CV of the student. BEC gives the opportunity to learn practical workplace English skills. Preparing for BEC improves one's confidence in using Business English, particularly speaking. Many Universities internationally recognize BEC for business courses.

COURSE OBJECTIVES

1. To understand the nuances of Business English
2. To enhance the student's English speaking skills
3. To clearly understand the difference between business English and colloquial English
4. To achieve maximum proficiency in business English

ACTIVITY STRUCTURE:

BEC is offered at three levels namely, BEC Preliminary, BEC Vantage and BEC Higher, based on four skills

1. Reading, Writing, Listening and Speaking.
2. BEC Preliminary is a lower intermediate level and is meant for candidates having limited confidence in their usage of English.
3. BEC Vantage is at intermediate level and is suitable for candidates who have fluency in English.
4. BEC Higher is an advanced level certificate and is for candidates who can use English very confidently in both professional and social situations.

The students would be evaluated based on their performance in various tests conducted. The tests include:

1. Diagnostic test
2. Speaking test
3. Mock test conducted by the Institute
4. Test conducted by British Council.

Performance in BEC would be evaluated for 50 marks each. A certificate would be awarded to those students who clear the test conducted by the British Council.

MBG354: SOFT SKILLS

INTRODUCTION

Management involves utilising the human capital of an enterprise to contribute to the success of the enterprise. Management is the act of coordinating the efforts of people to accomplish desired goals using available resources efficiently and effectively.

Today's workforce comes from varied social and cultural backgrounds, with differing standards of behaviour. These may not always be in sync with the norms of the organization. The ability to deal with differences, multiculturalism and diversity is needed more than ever. It is important, for students who would be entering the corporate world for the first time, to inculcate behaviour that is appropriate for the workplace. The importance of personal grooming, business etiquette, verbal and non-verbal communication, telephone etiquette and general professional conduct, can never be undermined.

Soft Skills is now recognised as key to making businesses more profitable and better places to work. Increasingly, companies aren't just assessing their current staff and future recruits on their business skills. They are now assessing them on a whole host of soft skill competencies around how well they relate and communicate to others.

It has been found that soft skills can be developed and honed on an on-going basis through good training, insightful reading, observation, and of course, practice, practice, practice.

Students can focus on areas of self-improvement to help improve their behaviour, transform their professional image and create a positive impact in their careers. Greater awareness of grooming and etiquette will help one to develop poise and confidence. This will significantly impact the image that one has in any formal, professional and social situations

LEARNING OBJECTIVES

1. To understand and enhance social skills
2. To help build greater confidence when interacting with people
3. To build on the ability to make a positive first impression
4. To help improve the overall appearance

ACTIVITY STRUCTURE

Students would be focusing on the following major activities under this Course:

a) Grooming and etiquette

b) Introspection, self awareness and self introduction

c) CV writing

d) Facing interviews

Guidance on the above issues would be given by an Expert and Faculty would be guiding them through one-to-one interaction. Assessing them on their performance would be done by the Faculty.

The assessment would be for 50 marks.