



List of Courses Focus on Professional Ethics, Gender, Human Values, Environment & Sustainability and other value framework

Department : *Industrial and Production Engineering*

Programme Name : *B.Tech.*

Academic Year : 2017-18

Courses which focuses on Professional Ethics, Gender, Human Values, Environment & Sustainability and other value framework:

Sr. No.	Course Code	Name of the Course
01.	IP5TOE11	Financial Management
02.	IP5TOE12	Managerial Economics
03.	IP5TOE13	Financial Accounting And Costing
04.	IP6TOE21	Enterprise Resource Planning
05.	IP6TOE22	Management Information System
06.	IP6TOE23	Six Sigma And DOE


गुरु घासीदास विश्वविद्यालय
(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
कोनी, बिलासपुर - 495009 (छ.ग.)



Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur - 495009 (C.G.)

Scheme and Syllabus




INSTITUTE OF TECHNOLOGY
GURU GHASIDAS VISHWAVIDHALAYA
 (A CENTRAL UNIVERSITY ESTABLISHED BY THE CENTRAL UNIVERSITY
 ORDINANCE 2009, NO: 3 OF 2009)
DEPARTMENT OF INDUSTRIAL & PRODUCTION ENGINEERING
STUDY & EVALUATION SCHEME
W.E.F. SESSION 2017-2018
 Year: B.Tech. III year
SEMESTER-V

S. No.	Course No.	SUBJECT	PERIODS			EVALUATION SCHEME			CREDITS
			L	T	P	INTERNAL ASSESSMENT	ESE	SUB-TOTAL	
1.	IP5TPC31	Metal Cutting	3	0	0	40	60	100	3
2	IP5TPC32	Fluid Machinery	3	0	0	40	60	100	3
3	IP5TPC33	Machine Design- I	3	0	0	40	60	100	3
4	IP5TPE2..	Elective-PE2	3	0	0	40	60	100	3
5	IP5TPE3..	Elective-PE3	3	0	0	40	60	100	3
6	IP5TOE1..	Elective-OE1	3	0	0	40	60	100	3
Total			18	0		240	360	600	18
PRACTICALS									
7.	IP5LPC31	Metal Cutting	-	-	03	30	20	50	2
8.	IP5LPC32	Fluid Machinery	-	-	03	30	20	50	2
9.	IP5LPC33	SEMINAR			03	50		50	2
Total					09	110	40	150	06

Elective-Professional Elective (PE)-2		Elective-Professional Elective (PE)-3		Elective- Open Elective (OE)-1	
S.N.	IP5TPE...	S.N.	IP5TPE...	S.N.	IP5TOE...
21.	Turbo Machines	31.	Total Quality Management	11.	Financial Management
22.	I.C. Engine	32.	Industrial Automation	12.	Managerial Economics
23.	MEMS and Nanotechnology	33.	Mechatronics	13.	Financial Accounting and Costing

Sandhu 22/5/17
Dalbir Singh Rishi 22/05/17
Abhishek 22/5/17
Manoj

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IP5TOE11 - Financial Management

UNIT -I

Introduction: Scope and objective, organisation of finance function, Time value risk and return and valuation of money, valuation of long term securities various model of pricing.

UNIT -II

Statement of changes in financial position: Sources and uses of working capital ,cash flow statement, balance sheet, profit loss account and its process

Financial ratio analysis: Meaning, types, importance and limitations, calculation of various ratios.

UNIT -III

Capital budgeting: Principals, techniques, various methods of capital budgeting. Concept and measurement of cost and capital, and various approaches for measurement of cost of capital and computation.

Analysis of risk and uncertainty: various approaches for risk evaluation.

UNIT -IV

Theory of working capital management: Concept and definition of gross, working capital and net working capital, trade off between profitability and risk.

UNIT -V

Operating financial and combined leverage: Introduction, definition and concept and various approaches.

Text Books:

- 1 Financial Management by Khan and Jain, TMGH
3. Financial Management by Kuchhal, Vikas Publication
4. Financial Management- Paresh Shah-Willey India Pvt. Ltd.

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M. Singh



IP5TOE12 - Managerial Economics

UNIT- I

Introduction to Managerial Economics, Different Area of Managerial Economics, Micro and Macro Economics, Nature and Scope of Managerial Economics- Demand Analysis, Law of Demand and its Exceptions. Elasticity of Demand: Definition, Types, Measurement and Significance of Elasticity of Demand. Supply Analysis, Law of Supply, Elasticity of Supply: Definition, Types, Measurement and Significance of Elasticity of Supply.

UNIT- II

Law of Return, Revenue Analysis, Theory of Production and Cost Analysis: Production Function, Cobb-Douglas Production Function, ACMS Production Function, Investment Function.

Cost Analysis: Cost Concept, Opportunity Cost, Fixed Vs Variable Cost, Explicit Costs Vs Implicit Costs, Out of Pocket Costs Vs Imputed Costs. Break-even Analysis (BEA) - Determination of Break-even Point (Simple Problem) - Managerial Significance and Limitation of BEA.

UNIT-III

Introduction to Market & Pricing Policies: Element of Market , Types of Market, Concept of Market, Classification of Market based on the nature of competition, Types of Competition, Features of Perfect Competition, Feature of Imperfect Competition, Monopoly and Monopolistic Competition, Price-Output Determination in case of Perfect Competition and Monopoly.

Objectives and Policies of Pricing: Introduction, Full Cost or Cost plus Pricing, Differential Pricing, Going Rate Pricing, Marginal Cost Pricing, Trade Association Pricing, Loss Leadership Pricing, Administered Pricing

UNIT- IV

Forms of Business Organization: Introduction, Definition, Essential Element of Good Organization, Principles of Organization, Formal and Informal Organization, Organization Structure, Concept of Ownership Organization, Types of Ownership, Partnership, Joint Stock Company, Types of Joint Stock Company, Co-Operative Organization, Public Sector Organization.

Capital and Capital Budgeting: Capital and Its Classifications, Need of Working Capital and Its Assessment, Factors Affecting Working Capital, Fundamental of Accounting, Types of Capital, Method and Sources of Raising Finance ,Nature and Scope of Capital Budgeting, Features of Capital Budgeting Proposals, Method of Capital Budgeting: Payback Method, Accounting Rate of Return (ARR) and Net Present Value Method (Simple Problems).

UNIT- V

Fundamental of Financial Accounting: Nature of Accounting, Important Accounting Terminology, Accounts and Types of Accounts, Rules of Debit and Credit, System of Book Keeping, Book of Accounts, Journal, Ledger, Trial Balance, Final Account, Trading Account, Profit and Loss Accounts and Balance Sheet.

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Financial Analysis Through Ratios: Classification of Financial Ratios, Liquidity Ratios, Leverage Ratios, Activity Ratios, Profitability Ratios, Current Ratio, Acid Test Ratio, Debt Equity Ratio, Assets Coverage Ratio, Debt Service Coverage Ratio, Inventory Turnover Ratio, Debtor Velocity Ratio, Creditor Velocity Ratio, Gross Profit Ratio, Net Profit Ratio, Return on Equity Ratio.

Text Books:

1. Managerial Economics by Yogesh Maheshwari, PHI
2. Managerial Economics By Joel Dean, PHI
3. Managerial Economics By Craig H. Petersen, W. Cris Lewis, Sudhir K Jain
4. Financial Accounting For Management By Ambrish Gupta, Pearson Education
5. Managerial Economics By H. Craig Peterson & W. Cris Lewis, PHI
6. Managerial Economics By Suma Damodaran, Oxford University Press
7. Managerial Economics and Financial Analysis By Aryasri, TMH

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IP5TOE13 - Financial Accounting and Costing

UNIT-I

Financial Accounting: Introduction to Book keeping, Double-entry accounting, Journal & Ledger posting, Financial Statements & Analysis, Trial balance, preparation of Trading and Profit & Loss account and Balance Sheet.

UNIT-II

Ratio Analysis: Balance sheet ratios-current ratio, Fixed Asset ratio, Liquidity ratio, Capital Gearing Ratio, Profit-loss account ratios-Gross Margin ratio, Net Margin Ratio, Combined ratios-Return on Investment ratio, Net Profit to Total Assets ratio, Creditors turnover ratio.

UNIT-III

Costing: Objectives of costing, Elements of costing, methods of costing, preparation of cost sheet, job costing, Marginal costing, absorption costing, Process costing and Standard Costing-Material, labour, overhead cost variance, Activity Based Costing and Target Costing, Cost-Profit-Volume analysis and problems on cost-volume-profit analysis.

UNIT-IV

Working Capital Management: Introduction, concepts of working capital, operating and cash conversion cycle, permanent and variable working capital, balanced working capital position, determinants of working capital, Estimating working capital needs, Policies for financing current assets, Issues in working capital management.

UNIT-V

Capital Budgeting: Nature and scope of capital budgeting, features of capital budgeting, Methods of capital budgeting-DCF, NON-DCF techniques-Accounting rate of Return, Net present Value, Payback period, discounted payback period, Profitability Index.

Text Books:

1. T. Vijaya Kumar, Accounting for Management, 1/e, Tata McGraw-Hill, 2009.
2. I. M. Pandey, Financial Management, 9/e, Vikas Publishing House, 2009.
3. M.Y. Khan and P. K. Jain, Cost Accounting, 2/e, TMH, 2014.
4. M.Y. Khan and P. K. Jain, Management Accounting: Text, Problems and Cases, 6/e TMH, 2013.
5. M.Y. Khan, P. K. Jain, Basic Financial Management, 3/e, TMH, 2000.

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DEPARTMENT OF INDUSTRIAL AND PRODUCTION ENGINEERING B.TECH VI SEMSTER



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SEMESTER-VI

S. No	Course No.	SUBJECT	PERIODS			EVALUATION SCHEME			CREDITS
			L	T	P	INTERNAL ASSESSMENT	ESE	SUB-TOTAL	
1.	IP6TPC41	Machine Design- II	3	1	0	40	60	100	4
2	IP6TPC42	Measurement , Metrology & Control	3	1	0	40	60	100	4
3	IP6TPC43	Welding Engg.	3	0	0	40	60	100	3
4	IP6TPE4..	Elective-PE4	3	0	0	40	60	100	3
5	IP6TPE5..	Elective-PE5	3	0	0	40	60	100	3
6	IP6TOE2..	Elective-OE2	3	0	0	40	60	100	3
Total			18	2		240	360	600	20
PRACTICALS									
7.	IP6LPC42	Measurement and metrology lab	-	-	03	45	30	75	2
8.	IP6LPC43	Welding Engg. Lab	-	-	03	45	30	75	2
Total					06	90	60	150	04

Elective- Professional Elective (PE)-4		Elective- Professional Elective (PE)-5		Elective- Open Elective (OE)-2	
S.N.	IP6TPE4..	S.N.	IP6TPE5..	S.N.	IP6TOE2...
41.	Material Management	51.	Automobile Engg	21.	Enterprise Resource Planning
42.	Plant Layout & Material Handling	52.	Power Plant Engg	22.	Management Information System
43.	Maintenance And Reliability Engineering	53.	Heat & Mass Transfer	23.	Six Sigma And DOE

Dr. Bir Singh Relati
22/05/17

Dr. Anurag
22/05/17
Dr. Sandeep
22/05/17

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DEPARTMENT OF INDUSTRIAL AND PRODUCTION ENGINEERING B.TECH VI SEMSTER

IP6TOE21 - Enterprise Resource Planning

UNIT-I

Introduction to Enterprise resource planning, Evolution of ERP, MRP, MRP-II, e-ERP, Generic business model with reference to ERP, Structure of ERP Two tier architecture client, server, Three tier architecture, repository, RDBMS, Operating systems, Generic model of ERP system - Design tree node structure, Design of, Role/Activity Diagrams, Benchmarking, Types of Benchmarking, Process of Benchmarking.

UNIT-II

Introduction to Business Process Re-engineering, Procedure of BPR, Principle of BPR, Process improvement Process redesign

UNIT-III

Introduction : Supply chain Management and ERP, understanding the supply chain with case examples, Supply chain performance with measures, Achieving strategic fit and scope, Supply chain drivers, Supply chain obstacles, ERP Vs SCM, Benefits of supply chain improvement, Introduction of Logistics Types of Logistics, Types of Logistics, Benefits of Logistics.

UNIT-IV

Integrated SAP model, Integrated Data, Master Data, Transactional Data, Integrated processes, Evolution Electronic Data Interchange (EDI), Use of EDI, and Benefits of EDI, Selection of ERP: Introduction Opportunities and problems in ERP selection, Approach to ERP selection of ERP.

UNIT-V

Origins of SAP, SAP's Markets, SAP architecture and integration, SAP Business structure, Customization of SAP, SAP R/3 material Management, Sales and Distribution, Production, Plant Maintenance, Quality Management, Methodology for ERP implementation, Implementation phases, Implementation of Life cycle

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Text Books:

1. Enterprise Resource Planning: Theory and practice by Rahul V, PHI Publication.
2. Enterprise Resource Planning: Concepts and practice by V.K. Garg, TMH Publication.
3. Enterprise Resource Planning by Alexis Leon, McGraw-Hill Publication

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DEPARTMENT OF INDUSTRIAL AND PRODUCTION ENGINEERING B.TECH VI SEMSTER

IP6TOE22 - Management Information System

UNIT-I

Organisation & Types, Decision Making, Cost & value of information, Introduction to information in business, types of information system, need, importance, scope and characteristics of information system. Component of information system, developing information system.

MIS concept evaluation and characteristics structure of MIS, MIS v/s data processing, MIS and DSS

UNIT-II

Solving Business Problems with Information System, Concept of Balanced MIS, Effectiveness & Efficiency Criteria. Tool and Techniques of MIS- dataflow diagram, flow chart etc.

Data base technology- introduction, data base and enterprise management, data independence data base approaches, data base architecture, data models, DBMS SQL and working, 4GL, data administration.

UNIT-III

Business application of information technology: electronic commerce Internet, Intranet, Extranet & Enterprise Solutions, Information System for Business Operations, Information system for managerial Decision Support, Information System for Strategic Advantage.

UNIT-IV

Managing Information Technology, Enterprise & Global Management, Security & Ethical Challenges, Planning & Implementing Change. Reports: Various types of MIS reports, GUI & Other Presentation tools.

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DEPARTMENT OF INDUSTRIAL AND PRODUCTION ENGINEERING B.TECH VI SEMSTER

IP6TOE22 - Management Information System

UNIT-I

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Managing Information Technology, Enterprise & Global Management, Security & Ethical Challenges, Planning & Implementing Change. Reports: Various types of MIS reports, GUI & Other Presentation tools.

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Page 20 of 23



DEPARTMENT OF INDUSTRIAL AND PRODUCTION ENGINEERING B.TECH VI SEMSTER

UNIT-V

Advanced concepts in information system: Enterprise Resource Planning: introduction, various modules like Human Resources, Finance, Accounting, Production & Logistics. Supply Chain Management, CRM, Procurement, Management System Object Oriented modeling case studies.

Text Books:

1. O.Brian, "Introduction to Information System", McGraw Hill.
2. O.Brian, "Management Information System", TMH.
3. MIS by Rahul De Wiley.
4. MIS Louden and lauden PHI
5. Bansal, "Information System Analysis & Design", TMH.
6. Jawadegar, "Management Information System", TMH.
7. Murdick, "Information System for Modern Management", PHI.
8. Alexis Leon, "Enterprise Resource Planning", TMH.
- 9 MIS by Sadagopan, PHI

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DEPARTMENT OF INDUSTRIAL AND PRODUCTION ENGINEERING B.TECH VI SEMSTER

IP6TOE23 Six Sigma and DOE

UNIT-I

Quality Perception : Quality in Manufacturing, Quality in Service Sector, Differences between Conventional and Six Sigma concept of quality,

Probability Distribution: Normal, Binomial, Poisson distribution.

Basics of Six Sigma: Concept of Six Sigma, Defects, DPMO, DPU, Attackson X'S, Customer focus, Six Sigma for manufacturing, Six Sigma for service, Z score, Understanding Six Sigma organization, Leadership council, Project sponsors and champions, Master Black Belt, Black Belt, Green Belts.

UNIT-II

Methodology of Six Sigma: DMAIC, DFSS, Models of Implementation of Six Sigma, Selection of Six Sigma Projects. , Introduction to software for Six Sigma, Understanding Minitab, and Graphical analysis of Minitab plots.

UNIT-III

Six Sigma Tools: Project Charter, Process mapping, Measurement system analysis, Hypothesis Testing, Quality Function deployment, Failure mode effect analysis.

UNIT-IV

Design of Experiments: Applications of experimental Design, basic principles, design guidelines, statistical design and problems. Experimental design; statistical analysis of data. Loss function and its calculations.

UNIT-V

Comparative Experiments: Statistical concepts, sampling and sampling Distributions, Inferences about the differences in means, randomized design, and inference about differences in means paired comparison design, inferences about the variances of normal distributions, problems. Experiment with single factor: the analysis of variance (ANOVA), analysis of fixed effects models, model adequacy checking, practical interpretation of results, sample computer output, determining the sample size, discovering the dispersion effect, the regression approach to the ANOVA, and non-parametric method in the ANOVA.

Text Book:

1. Issa Bass, Barbara Lawton, Lean Six Sigma Using Sigma XL and Minitab,

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- 1/e, Tata McGraw-Hill, 2010.
2. DOE by Phillip Ross PHI.
3. P. Pande and L. Holpp, What is Six Sigma, 1/e, Tata McGraw-Hill, 2002.
4. P. Pande, The Six Sigma Way, 1/e, Tata McGraw-Hill, 2003.
5. R. Cavanagh, R. Neuman, P. Pande, What is Design for Six Sigma, 1/e, Tata McGraw- Hill, 2005.
6. SIX SIGMA by KK BHOTE Mc-graw hill.
7. D.C. Montgomery, Design and Analysis of Experiments, 8th Edition, John Wiley.

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