IP/IE- 801 (A) – Marketing Management

Unit 1 Introduction: Concepts of need, want, demand, selling and marketing; marketing as a process; relationship marketing; retaining customer; Porters competitive strategy model; barrier to entry/ exit; switching costs; stages and forms of competition; responding to competition; monopoly restriction by society;

Unit 2 Market planning and behavior: Market opportunity; services rendered by competitors; marketing programs; key success factors with respect to organization SWOT analysis; structure and process of market planning; marketing research and intelligence; market information system and data mining; consumer motivation and decision making process; organization buying behavior; define segmentation; bases for segmentation; industrial market segmentation; segmentation and targeting; demand forecasting; key terms market potential and penetration; qualitative and quantitative forecasting methods

Unit 3 Product:; Product key concepts; product features and quality; product modification, addition and deletion; product line and mix; variety and mass customization; Product Life Cycle (PLC); changes and shift in it; technology innovation effects; fads and fashion; locating products in PLC; new product ideas and decisions; product development process; art of positioning products; diffusion process affecting new products; test marketing and launching new products

Unit 4 Promotion: Advertising and publicity; advertising media and agencies; advertising decisions and effectiveness evaluation; sales promotion; personal selling; role of sales personal; motivation and personality trais of sales person; managing sales force; retail management; strategic decisions in retailing; IT support; direct marketing and internet; distribution channels and evaluating alternatives

Unit 5 Pricing and miscellaneous: Pricing objectives; price sensitivity; prizing strategies; internet and prizing; strategies in market warfare; Customer Relationship Management (CRM) and its importance; complaint management, services and customer loyalty; marketing performance measures; rural marketing importance and characteristics

References:

1. Kotler P; Marketing Management; PHI
2. Saxena Rajan; Marketing Management; TMH
3. Brown SA; Customer Relationship Management; John Wiley, Canada
4. Green PE and Donald ST; Research for Marketing Decisions; PHI
5. Rajgopal D; marketing concepts and cases; New age Pub

IP/IE- 801 (B) – Simulation & Process Modeling

Unit 1: Introduction to modeling and simulation: Modeling and simulation methodology, system modeling, concept of simulation; gaming; static, continuous and discrete event simulation.

Unit 2: Basic concept of probability, generation and characteristics of random variables, continuous and discrete variables and their distributions; mapping uniform random variables to other variable distributions; linear, nonlinear and stochastic models

Unit 3; Introduction to Queuing Theory: Characteristics of queuing system, Poisson's formula, birthdeath system, equilibrium of queuing system, analysis of M/M/1 queues. Introduction to multiple server Queue models M/M/c Application of queuing theory in manufacturing and computer system

Unit 4; System Dynamics modeling: Identification of problem situation, preparation of causal loop diagrams and flow diagrams, equation writing, level and rate relationship, Simulation of system dynamics models.

Unit 5: Verification and validation: Design of simulation experiments, validation of experimental models, testing and analysis. Simulation languages comparison and selection, study of simulation software - Arena, Pro-model, SIMULA, DYNAMO, STELLA, POWERSIM.

References:

1. Law AM and Kelton WD; Simulation Modeling and Analysis; TMH
2. Gordon G., System simulation, PHI Learningl
3. Banks J; Hand book of Simulation; John Wiley.
4. Taha H, Operations Research; PHI.
5. Hillier FS, Liberman GJ; Introduction to OR; TMH.
6. Deo N; System Simulation with Digital Computer; PHI Learning
7. Harrell C, Ghosh B, Bowden R; Simulation Using Promodel; MG Hill
8. Seila, Ceric and Tadikmalla; Applied Simulation Modeling, Cengage
9. Payer T., Introduction to system simulation, McGraw Hill.
10. Sushil, System Dynamics, Wiley Eastern Ltd.
11. Spriet JA; Computer Aided Modeling and Simulation, Academic Press INC; USA

IE- 802 – Financial Management

Unit 1 Working capital management: Determination of level of current assets; sources for financing working capital; bank finance for working capital; working capital financing; short and long term financing of working capital; working capital leverages

Unit 2 Cash Management: Forecasting cash flows; cash budgets, long-term cash forecasting; monitoring collections and receivables, optimal cash balances; Baumol model, Miller- model, Stone model; strategies for managing surplus fund.

Unit 3 Capital structure decisions: Capital structure & market value of a firm; theories of capital structure; NI approach, NOI approach, Modigliani Miller approach, traditional approach; arbitrage process in capital structure; planning the capital structure: EBIT and EPS analysis. ROI & ROE analysis; capital structure policy

Unit 4 Hybrid Financing: Preferred stock, warrants and convertibles, private equity; venture funds, angel financing; financial management in intangible-intensive companies; characteristics of intangibles, implications for financial managements, types and approaches to valuations of intangible assets.

Unit 5 Corporate financial modeling: Agency problem and consideration; effect of inflation on; asset value, firm value, returns; financial planning; basis of financial planning, sales forecast method, proforma P & L account method, pro-forma balance sheet method, determination of External Financing Requirement (EFR).

Unit 6 Financial Management of sick units: Definition of sickness, causes, symptoms, predictions, revival strategies, institutions for revival of sick units; Economic Value Added (EVA) concept, components of EVA; Market Value Added (MVA).

References:

1. Prasanna Chandra; Financial Management; TMH
2. Khan M.Y.& Jain P.K; Financial Management; TMH
3. Pandey I.M; Financial Management; Vikas,
4. Brigham & Ehrhardt, Financial Management-Theory & Practice; Thomson Learning,
5 Ross, Westerfield & Jaffe; Corporate Finance TMH
6 Bhat Sudhindra; Advanced Financial Management; Excel Books.
7 Vanhorne; Financial Management & Policy; Pearson / PHI
8 Keown, Martin, Petty. Scott; Financial management-principles and applications; PHI
9 Brearly and Myers; Principle of Corporate Finance; TMH

IP/IE- 803 – Project Management

Unit 1 Concepts of project management: Meaning, definition and characteristics of a project, technical and socio-cultural dimensions; project life cycle phases, project planning and graphic presentation; work breakdown structure, manageable tasks; size of network; blow down NW; identity and logic dummy activity; Fulkerson rule for numbering NW; time-scaled NW

Unit-2 NW analysis: PERT network; mean time and variances; probability to complete PERT project in specified time; CPM network; Event Occurrence Time (EOT); activity start/ finish times; forward and reverse path calculations, concept and calculation of floats; resource allocation and critical-chain; overview of MS-project-2000.

Unit-3 Project duration and control: Importance and options to accelerate project completion; timecost tradeoff; fixed variable and total costs; use of floats and cost optimization; project performance measures; project monitoring info and reports; project control process; Gant chart and control chart; cost-schedule S-graph; planned cost of work schedule (PV), budgeted/ earned cost of work completed (EV) and actual cost of work completed (AC); schedule and cost variances (SV, CV) forecasting final project costs.

Unit-4 Project organization, culture and leadership: projects within functional organization; dedicated project/ task-force teams; staff, matrix and network organization; choosing appropriate project organization; Organization culture; ten characteristics; cultural dimensions supportive to projects; social network and management by wandering around (MBWA); different traits of a manager and leader; managing project teams; five stage team development model; shared vision; conflicts; rewards; rejuvenating project teams; project stakeholders; concept of project partnering.

Unit-5 Strategic planning and project appraisal: Capital allocation key criteria; Porters competitive strategy model; BCG matrix; Strategic Position Action Evaluation (SPACE); time value of money; cash flows; payback period; IRR; cost of capital; NPV; social cost benefit analysis; UNIDO approach; project risks and financing.

References:

1. Prasana Chandra: Projects: planning Implementation control; TMH.
2. Gray Clifford F And Larson EW; Project The managerial Process; TMH
3. Panneerselven and Serthil kumar; Project management, PHI
4. Burke ; Project Management-Planning and control technics; Wiley India
5. Kamaraju R; Essentials of Project Management; PHI Learning
6. Jack R. Meredith, Project Management: a managerial approach, Wiley.
7. Choudhary ;Project Management; TMH
8. Srinath LS; PERT And CPM Principles and Appl; East West Press
9. Richman L; Project Management: Step By Step; PHI Learning
10. United Nations Industrial Development Organisation, Guide to practical project appraisal - social benefit cost analysis in developing countries, oxford & ibh

List of Experiments (please expand it):

1. Study of project planning software like MS-project
2. Case studies on project management
3. Solution of project networks- manual and using software

IE- 804 – Ergonomics

UNIT- I

Introduction: Definition, History of Development, Characteristics of Man Machine Systems, Relative capabilities of Human beings and Machines,

UNIT- II

Information Input and Processing :

a) Introduction to information theory, Factors affecting information reception and processing. Coding and Selection of sensory inputs.
b) Human Sensory Process: Vision, Hearing, Cutaneous, Kinesthitics, and orientation senses.

UNIT- III

Display:

a) Visual Display: Quantitative and qualitative types of visual display, Visual indicators and warning signals, pictorial and Graphic displays, Alphanumeric Characteristics, Symbolic Codes.

B) Auditory and Textual Display: General Principles, Characteristics and Selection of Auditory and Textual display.

UNIT- IV

Human Motor Activities :

a) Biomechanisms of motion, Measurement of Physiological Functions, Energy Expenditure in Physical Activities.
b) Human Control of Systems: Human input and output channels. Compatibility, Tracking Operations, Design of Control.
c) Anthropometry: Anthropometrics Data and their uses, Work Space Dimensions. Design of seats and seating Arrangement, Location of components, Design of work place.

UNIT- V

Environment and Safety: Introduction to Environmental stresses and their impacts on human work. Industrial Safety: Analysis of cost of accidents, Hazards in various fields like Fire, Electrical shocks. Chemicals, Material Handling, Radiation Machine and Machine Tools and Methods of eliminating them, Personnel Protective equipments, Government legislation about occupational safety, organization for safety, plant safety.

Books & References Recommended :

1. McCormick, Human Factors in Engineering and design.
2. Singalton, Introduction to Ergonomics.

IE- 805 Major Project

Objectives of the course Minor/Major Project are:

- To provide students with a comprehensive experience for applying the knowledge gained so far by studying various courses.
- To develop an inquiring aptitude and build confidence among students by working on solutions of small industrial problems.
- To give students an opportunity to do some thing creative and to assimilate real life work situation in institution.
- To adapt students for latest development and to handle independently new situations.
- To develop good expressions power and presentation abilities in students.

The focus of the Major Project is on preparing a working system or some design or understanding of a complex system using system analysis tools and submit it the same in the form of a write up i.e. detail project report. The student should select some real life problems for their project and maintain proper documentation of different stages of project such as need analysis market analysis, concept evaluation, requirement specification, objectives, work plan, analysis, design, implementation and test plan. Each student is required to prepare a project report and present the same at the final examination with a demonstration of the working system (if any)

Working schedule The faculty and student should work according to following schedule:
Each student undertakes substantial and individual project in an approved area of the subject and supervised by a member of staff.The student must submit outline and action plan for the project execution (time schedule) and the same be approved by the concerned faculty.

Action plan for Major Project work and its evaluation scheme #(Suggestive)

Task/Process	Week	Evaluation	Marks For Term Work#
Orientation of students by HOD/Project Guide	1st	-	-
Literature survey and resource collection	2nd	-	-
Selection and finalization of topic before a committee*	3rd	Seminar-I	10
Detailing and preparation of Project (Modeling, Analysis and Design of Project work	4th to 5th	-	10
Development stage			
Testing, improvements, quality control of project	6th to 10th 11th	-	25
Acceptance testing	12th	-	10
Report Writing	13th to 15th	-	15
Presentation before a committee (including user manual, if any)	16th	- Seminar-II	30

* Committee comprises of HOD, all project supervisions including external guide from industry (if any)
# The above marking scheme is suggestive, it can be changed to alternative scheme depending on the type of project, but the alternative scheme should be prepared in advance while finalizing the topic of project before a committee and explained to the concerned student as well.
NOTE: At every stage of action plan, students must submit a write up to the concerned guide: