

**Master of Business Administration  
(Biotechnology Management)**

**Programme Code: MBT**

**Duration – 2 Years Full Time**

**Programme Structure  
And  
Curriculum & Scheme of Examination**

**2010**

**AMITY UNIVERSITY UTTARPRADESH  
GAUTAM BUDDHA NAGAR**

## PREAMBLE

Amity University aims to achieve academic excellence by providing multi-faceted education to students and encourage them to reach the pinnacle of success. The University has designed a system that would provide rigorous academic programme with necessary skills to enable them to excel in their careers.

This booklet contains the Programme Structure, the Detailed Curriculum and the Scheme of Examination. The Programme Structure includes the courses (Core and Elective), arranged semester wise. The importance of each course is defined in terms of credits attached to it. The credit units attached to each course has been further defined in terms of contact hours i.e. Lecture Hours (L), Tutorial Hours (T), Practical Hours (P). Towards earning credits in terms of contact hours, 1 Lecture and 1 Tutorial per week are rated as 1 credit each and 2 Practical hours per week are rated as 1 credit. Thus, for example, an L-T-P structure of 3-0-0 will have 3 credits, 3-1-0 will have 4 credits, and 3-1-2 will have 5 credits.

The Curriculum and Scheme of Examination of each course includes the course objectives, course contents, scheme of examination and the list of text and references. The scheme of examination defines the various components of evaluation and the weightage attached to each component. The different codes used for the components of evaluation and the weightage attached to them are:

<u>Components</u>	<u>Codes</u>	<u>Weightage (%)</u>
Case Discussion/ Presentation/ Analysis	C	05 - 10
Home Assignment	H	05 - 10
Project	P	05 - 10
Seminar	S	05 - 10
Viva	V	05 - 10
Quiz	Q	05 - 10
Class Test	CT	10 - 15
Attendance	A	05
End Semester Examination	EE	70

It is hoped that it will help the students study in a planned and a structured manner and promote effective learning. Wishing you an intellectually stimulating stay at Amity University.

July, 2010

## PROGRAMME STRUCTURE

### FIRST SEMESTER

Course Code	Course Title	Lecture (L) Hours Per Week	Tutorial (T) Hours Per Week	Practical (P) Hours Per Week	Total Credits	Page No.
MBT 101	Foundation Course (30 hours) Basics of Life Sciences (Non Credit Course)	-	-	-	-	
MBT 102	Bio-instrumentation	3	-	-	3	
MBT 103	Organizational Theory & Management	3	1	-	4	
MBT 104	Marketing Management	3	-	-	3	
MBT 105	Computer Applications	2	1	-	3	
MBT 106	Accounting for Management	3	1	-	4	
MBT 107	Economic Analysis	3	1	-	4	
MBT 108	Quantitative Applications in Management	2	1	-	3	
MBT 120	Bio-instrumentation Lab	-	-	2	1	
MBT 142	Business Communication - I	1	-	-	1	
MBT 143	Behavioural Science - I	1	-	-	1	
MBT 144	Foreign Language - I	2	-	-	2	
MBT 145	French					
MBT 146	German					
MBT 147	Spanish					
MBT 148	Japanese					
	Chinese					
	<b>TOTAL</b>				<b>29</b>	

### SECOND SEMESTER

MBT 201	Industrial Biotechnology	3	-	-	3	
MBT 202	Immuno-Technology & Diagnostics	3	-	-	3	
MBT 203	Essentials of Bioinformatics	2	1	-	3	
MBT 204	Pharmaceutical Management	3	-	-	3	
MBT 205	Financial Management	3	1	-	4	
MBT 206	Market Research & Report Preparation	3	1	-	4	
MBT 207	Business Environment & Law	3	1	-	4	
MBT 220	Industrial Biotechnology Lab	-	-	2	1	
MBT 242	Business Communication - II	1	-	-	1	
MBT 243	Behavioural Science - II	1	-	-	1	
MBT 244	Foreign Language -II	2	-	-	2	
MBT 245	French					
MBT 246	German					
MBT 247	Spanish					
MBT 248	Japanese					
	Chinese					
	<b>TOTAL</b>				<b>29</b>	

### SUMMER INTERNSHIP: 8 – 10 WEEKS

### THIRD SEMESTER

MBT 301	Strategic Management	3	1	-	4	
MBT 342	Business Communication - III	1	-	-	1	
MBT 343	Behavioural Science - III	1	-	-	1	
MBT 344	Foreign Language -III	2	-	-	2	
MBT 345	French					
MBT 346	German					
MBT 347	Spanish					
MBT 348	Japanese					
MBT 348	Chinese					
MBT 350	Summer Internship (Evaluation)	-	-	-	9	
<b>Electives: Choose any 9C.U from Group A &amp; 9 C.U from Group B or Group C</b>						
<b>GROUP - A Biotechnology</b>						
MBT 302	Recombinant DNA Technology	3	-	-	3	
MBT 303	Genomics & Proteomics	3	-	-	3	

MBT 304	Clinical Data Management	3	-	-	3	
MBT 305	Bio-safety Regulations	3	-	-	3	
<b>GROUP - B Business Development</b>						
MBT 306	Product & Brand Management	3	-	-	3	
MBT 307	Rural & Agricultural Marketing	3	-	-	3	
MBT 308	Recruitment, Selection, Training & Development	3	-	-	3	
MBT 309	International Business Management	3	-	-	3	
<b>GROUP - C Operations Management</b>						
MBT 310	Principles of Operations Management	3	-	-	3	
MBT 311	Total Quality Management	3	-	-	3	
MBT 312	Process & Productivity Analysis & Improvement	3	-	-	3	
	<b>TOTAL</b>				<b>35</b>	

**Note:** One Course BSI/EMC<sup>2</sup> could be chosen by a student as an alternative to any of the course from Group B or C above. Each of these courses has 4 credit units. Also, BSI Courses will need additional fees to be paid.

#### **FOURTH SEMESTER**

MBT 401	Business Ethics in Biotech Industry	3	1	-	4	
MBT 442	Business Communication - IV	1	-	-	1	
MBT 443	Behavioural Science - IV	1	-	-	1	
	Foreign Language - IV	2	-	-	2	
MBT 444	French					
MBT 445	German					
MBT 446	Spanish					
MBT 447	Japanese					
MBT 448	Chinese					
MBT 455	Dissertation	-	-	-	9	
<b>Electives: Choose any 9 C.U from Group A &amp; 9 C.U from Group B or Group C</b>						
<b>GROUP - A Biotechnology</b>						
MBT 402	Drug Discovery & Development	3	-	-	3	
MBT 403	Environment Management	3	-	-	3	
MBT 404	Food Biotechnology	3	-	-	3	
MBT 405	Intellectual Property Rights	3	-	-	3	
<b>GROUP - B Business Development</b>						
MBT 406	Advertising & Sales Promotion	3	-	-	3	
MBT 407	Industrial Marketing	3	-	-	3	
MBT 408	Venture Capital Financing	3	-	-	3	
MBT 409	Business Plan Development	3	-	-	3	
<b>GROUP - C Operations Management</b>						
MBT 410	World Class Manufacturing & Technology	3	-	-	3	
MBT 411	Operations Strategy	3	-	-	3	
MBT 412	Innovation & Technology Management	3	-	-	3	
MBT 413	Supply Chain Management & Logistics	3	-	-	3	
	<b>TOTAL</b>				<b>35</b>	

**Note:** One Course BSI/EMC<sup>2</sup> could be chosen by a student as an alternative to any of the course from Group B or C above. Each of these courses has 4 credit units. Also, BSI Courses will need additional fees to be paid.

# Curriculum & Scheme of Examination

## BASICS OF LIFE SCIENCES

**Course Code:** MBT 101

**Non Credit Course**

### Course Objective:

This course aims at giving the know how of basic concepts of life sciences like cell biology, molecular biology, genetics, tissue culture, microbiology and biochemistry to the students which is a prerequisite for studying advanced courses concerning biotechnology.

### Course Contents:

#### Module I: Cell Biology

Characteristics of prokaryotic and eukaryotic cell, Overview of structure and function of cell and its organelles; nucleus, ribosome, cell membrane, mitochondria, chloroplast, lysosomes; Biogenesis of plastids and mitochondria; Cell cycle.

#### Module II: Molecular Biology

Semi conservative model of DNA replication; Rolling circle model, Overview of transcription, translation.

#### Module III: Genetics

Concept of classical genetics, mendelian laws of inheritance, linkage, crossing over, modern gene concepts, mutation; Sex determination in plants and animals.

#### Module IV: Tissue Culture

Plant and animal tissue culture, types, formulation of growth media, techniques and applications.

#### Module V: Microbiology - I

##### Basic concepts

Introduction (bacteria, fungi, algae, protozoa and viruses), Contribution of Scientists, Koch's Postulates, Microbial Cell Structure and Function, Pure cultures, Isolation of microbes.

#### Module VI: Microbiology - II

##### Control, growth and maintenance of microbes

Methods of Sterilization, Modes of Nutrition, Growth, Growth Curve, Synchronous, Continuous and Diauxic growth, Culture Collections, Maintenance of cultures.

#### Module VII: Biochemistry - I

**Chemical Constituents of Life:** Basic concepts of the Biomolecules: Carbohydrates, Lipids, Proteins, Nucleic acids, Enzymes, Vitamins.

#### Module VIII: Biochemistry - II

**Integration of Metabolism:** Outline of Major Metabolic Pathways of Energy Metabolism, Metabolism in starvation.

### Examination Scheme:

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

### Text & References:

#### Text:

- The Cell, B. Alberts, D. Bray, A. Johnson, J. Lewis, M. Roff, K. Robert, P. Walter and K. Roberts, Garland Publishing Company
- Molecular Cell Biology, H.Lodish, A.Berk, S.L. Zipursky, P. Matsudaura, D. Baltimore and J. Danell, W.H. Preeman and Company.
- Principles of Biochemistry, A.L. Lehninger, D.L. Nelson, M.M. Cox, Worth Publishing Microbiology, Prescott, Hartley and Klein
- Principles of Genetics, E J Gardner, John Wiley & Sons Inc.

**References:**

- Cell and Molecular Biology, Gerald Karp, John Wiley and Sons Inc.
- Biochemistry, L. Stryer, W.H. Freeman and Company
- Cell and Molecular Biology, DeRobertis, B.I. Publication Pvt. Ltd.
- Harper's Biochemistry, K. Robert, M.D. Murray, D.K. Granner, P.A. Mayes and V.I. Rodwell, McGraw-Hill/Appleton and Lange.
- Biochemistry, C.K. Mathews, K.E. Van Holde and K.G. Ahern, Benjamin / Cummings.
- Devlin's Textbook of Biochemistry with Clinical correlations, John Wiley and Sons Inc.
- Microbiology, Tortora, Funke and Chase, Benjamin & Cummings
- Principles of Microbiology, R.M. Atlas, Wm C. Brown Publisher.
- General Microbiology, R.Y. Stanier, J.L. Ingraham, M.L. Wheelis and P.R. Painter, Macmillan
- Microbiology VI Edition, M.J. Pelczar, E.C.S. Chan and N.R. Kreig, Tata McGraw Hill Genome, T.A. Brown, John Willey & Sons Inc.
- Molecular Biology of the Gene (Fifth Edition), J.D. Watson, A.M. Weiner and N.H. Hopkins, Addison – Wesley Publishing
- Gene VIII, Benjamin Lewin 2005, Oxford University Press
- Concepts of Genetics (Sixth Edition), William S. Klug and Michael R, Cummings, Pearson Education
- Genetics, R. Goodenough, International Thomson Publishing
- Concepts of Genetics, W.S. Klug, and M.R. Cummings 2004, Pearson Education
- Genetics, M.W. Strickberger, Prentice Hall College Division
- Principles of Genetics, D.P. Snustad & M.J. Simmons, John Wiley and Sons Inc
- Genetics, P.J.Russell, Benjamin/Cummings
- Genetics, P.K. Gupta, Rastogi Publication
- Genetics, Veerbala

# BIO-INSTRUMENTATION

**Course Code: MBT 102**

**Credit Units: 03**

## **Course Objective:**

This course will allow students to gain theoretical and practical knowledge of both; commonly used and specialized laboratory instruments.

## **Course Contents:**

### **Module I: Basic Concepts**

Acids and bases, Concept of pH, pKa, Titration curve, Henderson-Hasselbalch equation and Buffers.

### **Module II: Microscopy**

Optical and Electron Microscopy, Transmission and Scanning Electron Microscopy

### **Module III: Centrifugation**

Principle of Sedimentation, Rotors-types, Preparative and Analytical ultracentrifuges, application of density gradient and differential centrifugation;

### **Module IV: Electrophoresis**

Paper and gel electrophoresis, Isoelectric focusing, Two-dimensional electrophoresis.

### **Module V: Chromatography**

Paper, TLC, Gas chromatography, Gel filtration, Ion-exchange chromatography, Affinity chromatography, HPLC and Adsorption chromatography

### **Module VI: Spectroscopy**

UV and visible spectrophotometry, Atomic absorption spectrophotometry, Mass Spectrometry, Nuclear Magnetic Resonance and Electron Spin Resonance spectroscopy

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Practical Biochemistry, Principles & Techniques, Keith Wilson and John Walker

### **References:**

- Bioinstrumentation, Webster
- Advanced Instrumentation, Data Interpretation, and Control of Biotechnological Processes, J.F. Van Impe, Kluwer Academic
- Principles of Physical Biochemistry, K.E. Van Holde, Prentice Hall
- Principles of Physical Biochemistry, Devlin
- Crystal Structure Analysis, J.P. Glusker and K.N. Trueblood, Oxford University Press
- Crystallography made Crystal Clear, G. Rhodes, Academic Press
- Essentials of Biophysics, P. Narayanan, New Age International Publishers
- Modern Spectroscopy, J.M. Hollas, John Wiley and Son Ltd.
- NMR Spectroscopy: Basic Principles, Concepts and Applications in Chemistry, H. Gunther, John Wiley and Sons Ltd.

# ORGANIZATIONAL THEORY AND MANAGEMENT

**Course Code: MBT 103**

**Credit Units: 04**

## **Course Objective:**

Managers face difficult and exciting challenges today. A global economy in which world-class quality is the ticket to success, increased diversity in the work force, calls for more ethical conduct and promise to keep things interesting. As trustees of society's precious human, material, financial, and informational resources, managers hold the key to a better world. A solid grounding in management and behaviour are, therefore, essential to guide large and small, profit and non-profit organizations successfully through these turbulent times. The objective of this course is to impart a complete understanding about Organizational theory, its historical roots of management and changing paradigms of Individual – Organizational Fit. The learning unfolds structural and strategic processes of Human Resources in totality.

## **Course Contents:**

### **Module I: Overview of Management**

Schools of Management, Managing and Managers, The Challenges of Management, The Practice and Study of Management, Emerging Issues in Management

### **Module II: Management in the Era of Change**

Multiple Stakeholder Relationships, The Rise of the Environmental Movements, Ethics and Social Responsibility, Values and Quality Improvement, Globalization of Management

### **Module III: Interpreting the Organizational Reality**

The Systems approach to Organization, Images of Organization, Organizational Power, Conflict and Politics, Organizational Decision – Making and Strategy Formulation, Managing Organizations – An understanding of why Organizations Fail.

### **Module IV: The Organization**

Motivation and Job Performance, Organizational Structure, Organizational Design, Organizational Culture, Managing Careers & Mentor Relationship

### **Module V: Human Resource Management in Perspective**

Human Resource Management and the Strategic role of HR, Fundamentals, Purpose & Environment of Human Resource, Human Resource Evaluation, Human Resource Planning, Emerging trends in HR

### **Module VI: Human Resource Management in Action**

Acquiring Human Resources, Learning & Development of Human Resource, Performance Management System, International Human Resource Management, Organizations - A Future Perspective

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Agarwal, Tanuja, 2007, Strategic Human Resource Management, Oxford University Press.
- Shukla, M. 2006, Understanding Organizations: Organizational Theory and Practices in India, PHI.

### **References:**

- Barat, N. 1998, Emerging issues in Management, Excel Books, India.
- David K. Banner & T Elaine Gague, Designing Effectives Organizations: Sage Publications.
- Greenberg, J. & Baron, R.A. 1993, Behaviours in Organizations, Allyn and Bacon, Boston.
- F Luthans, Organization Behaviour, 8<sup>th</sup> Ed, TMGH
- Mainiero, L. A. & Tromley, 2006, Developing Managerial Skills in Organizational Behaviour, Exercises, Cases and Readings, 2<sup>nd</sup> Ed, Prentice Hall International.
- Robbins, S.P. 2005, Organizational Theory: The structure and design of organizations, 3<sup>rd</sup> Ed, Prentice Hall International.
- Russell L Ack off: Recreating the Corporation: A Design of Organization for the 21<sup>st</sup> Century. Oxford University Press
- Schermerhorn, J.R. Jr.; Hunt, J.G. & Osborn, R.N. 1985, Managing Organizational Behaviour, John Wiley & Sons.



# MARKETING MANAGEMENT

**Course Code: MBT 104**

**Credit Units: 03**

## **Course Objective:**

The objective of this course is to introduce the basic concepts of marketing business environment, consumers and markets and to develop a feel of the marketplace.

## **Course Contents:**

### **Module I: Understanding Marketing Management**

The production concepts, product concept, selling concept, the marketing concept, comparison of various concepts, Relationship marketing, Social marketing, Customer needs, Customer value and satisfaction. CRM, Value chain analysis, Value delivery network, Strategic Planning, Introduction to strategic planning with marketing perspective, Designing business portfolio, Marketing plan, Marketing process, Marketing service.

### **Module II: Market research business environment and Understanding Consumer Behaviour**

Market research, Objectives, Primary and Secondary Research, Gathering and Analyzing Data .The factors influencing consumer behaviour. The stages buying process, the buying decision making process, factors effecting the buying decision, problem recognition, information search, Examination of alternatives, purchased decision, post purchase behaviour, The industrial buying process

### **Module III: Segmentation, Managing Competition**

Competition, identifying competition, strategies of competition, strengths and weaknesses of competitors, reaction patterns of various market players, customer value analysis. Strategies adopted by market leaders, market followers and market challengers. Market segmentation, Lifestyle Marketing, Generation X Consumers and differentiating your offering, targeting, Positioning, Product life cycles, stages in lifecycle and factors effecting each stage, Managing product life cycles.

### **Module IV: Product Management**

Classification of products, New Product development, stages of product development, kinds of consumers depending on stage of adoption. Adoption process, Product mix decisions and line management, Length, width and depth of a line, line analysis, and brand management. Marketing of services

### **Module V: Pricing Strategies**

Production to the various objectives of pricing, steps adopted in selecting the right price. Various pricing strategies, Adapting prices according market requirements, responding to various market price changes. Initiating a price change and handling impacts of price changes.

### **Module VI: Managing Channels**

Channel functions, channel flows, establishing channel objectives, identifying channel alternatives, evaluating alternatives, selecting channel partners, training and motivating channel members, Channel dynamics, conflict and cooperation in channel members, Market logistics, Sales force management.

### **Module VII: Managing the Integrated Communication**

What is communication? Setting of communication objectives, identifying target audience, modes of communication, designing message, choosing tool for communication, Media decisions, evaluating various media, Advertising management, Advertisement management, Managing sales promotions, evaluating results, integrating the entire communication, role of public relations and publicity, significance and managing communication through direct marketing and personnel selling, role of internet marketing, emerging communication trends.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Principles of Marketing by Philip Kotler 11<sup>th</sup> Ed, PHI publications

### **References:**

- Marketing Management by Rajan Saxena, 3<sup>rd</sup> Ed, Tata McGraw Hill
- Marketing Management by Ramaswamy, 3<sup>rd</sup> Ed, Namakumari

# COMPUTER APPLICATIONS

**Course Code: MBT 105**

**Credit Units: 03**

## **Course Objective:**

The course will expose the students to the latest trends in computer and understand the concepts and working of latest business application packages.

## **Course Contents:**

### **Module I: Introduction to computers**

Computer fundamentals: History and development of computers, Computer architecture. History and development of software: (generations of software), Types of software, Next generation of software, System Software (Operating Systems, Computer Languages, Application software).

### **Module II: DBMS**

Introduction to DBMS, Traditional file system, Benefits of DBMS over traditional file system, Types of DBMS: OODMBS, RDBMS, NDBMS, DDBMS, HDBMS. Examples of each, Advantages and disadvantages of each SQL AND MS ACCESS as tools for understanding of DBMS concepts. Query handling, Forms (Develop a small application in MS-ACCESS using databases and forms as front end.)

### **Module III: Management Information Systems**

Introduction to Information Systems, Roles, scope and advantage of Transaction Processing Systems, Management Information Systems, Decision Support Systems, Executive Support Systems. Success factors in implementation of Information Systems,

### **Module IV: Network Technologies for Business**

Introduction to networking, Internet, Intranet, Extranet. Application of Internet: Search engines, Meta Search Engines, email, Blogs, VOIP, IPTV

Mobile Technologies :- GSM, CDMA, EDGE, 2G,3G,4G , GPRS , Routers and Switches , GPS, UMTS, i-Mode, Internet Protocols (IPv4,IPv6) , Working of Facsimile .

### **Module V: E-commerce and M-commerce**

Introduction to E-Commerce and M-Commerce, Advantages and Disadvantages of each. Concept of B2B, B2C, G2B etc. Working of an ATM Machine, Concept of Internet Banking, Online Shopping. Security Threats and remedies. (Piracy, Hacking, Cracking, Pishing, Spamming Etc.), IT-ACT 2000.

### **Module VI: Software for Business Applications**

SPSS, MS-Office, ORACLE ERP, SAS, Prowess, Comparison between Windows & Linux (Capabilities, Licensing Differences, Usage etc.). Shareware, Freeware, Malware.

### **Module VII: E-governance**

E-governance as an effective tool to manage the country's citizens and resources, Advantages and Disadvantage of e-governance, History and Future of e-governance, e-governance perspective in India Advantages of E-governance to a developing economy like India.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Peter Norton, Introduction to Computers, 6<sup>th</sup> Ed., TMGH
- Elmasri, Et al, Fundamentals of Database Systems, 1<sup>st</sup> Ed, Pearson Education Inc.

### **References:**

- Andrew S Tanenbam, Computer Networks, 4<sup>th</sup> Ed, Pearson Education Inc.
- William Stallings, Data and Computer Communications, 7<sup>th</sup> Ed, Pearson Education Inc.
- Kamlesh Bajaj & Debjani Nag, E-commerce the Cutting Edge of Business, 2<sup>nd</sup> Ed, TMGH

# ACCOUNTING FOR MANAGEMENT

**Course Code: MBT 106**

**Credit Units: 04**

## **Course Objective:**

The objective of this course is to help students develop an understanding of the techniques of financial, cost and management accounting from the perspective of the user of accounting information. The students will acquire the knowledge of how the financial statements and reports are prepared, read and analyze them for financial decision making. This being an introductory paper, emphasis will be on the usage of annual reports/ databases to develop analytical skills among the students in reading the financial statements and analyzing them.

## **Course Contents:**

### **Module I: Introduction to Accounting**

The meaning, nature, functions and usefulness of accounting, branches of accounting, accounting concepts and Generally Accepted Accounting Principles, accounting equation, concept of double entry and the accounting cycle, Preparation of journal, ledger and trial balance

### **Module II: Preparation of Financial Statements**

Financial statements and their nature, Preparation of Manufacturing, Trading, and Profit and Loss Account and Balance Sheet- Matching of Revenue (AS 9) and Expenses, Fixed Assets (AS 10), Depreciation (AS 6) and other related adjustments. Form and Contents of Financial Statements with reference to Indian Companies (Schedule VI)

### **Module III: Analysis of Financial Statements**

Introduction to the various tools of analysis, Ratios analysis: Liquidity, Activity, Capital Structure, Profitability Ratios, Preparation of fund flow and cash flow statements (AS 3).

### **Module IV: Cost Accounting**

Elements of Cost, Cost Classification and Allocation, Cost Sheet, Methods of Inventory Valuation (AS 2), Absorption and variable cost methods.

### **Module V: Management Accounting**

Emergence of Management Accounting, Marginal Costing and Cost Volume – Profit Analysis, Budgeting and Variance Analysis

### **Module VI: Introduction to Advancements in Accounting**

Overview of Activity Based Costing, Target Costing and Life Cycle Costing and implications for management decision making

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Bhattacharya, S.K. and Dearden, J. 2006 - Accounting for Management, Vikas Publishing House

### **References:**

- Narayanaswamy R, 2005, 2nd Edition, Financial Accounting –A Managerial Perspective, PHI (Prentice Hall of India.)
- Maheshwari S N and S K Maheshwari, 2006, Accounting for Management, Vikas Publishing House Pvt. Ltd.
- Tulsian, P.C. 2006 - Financial Accounting, 2<sup>nd</sup> Ed, Tata McGraw Hill.
- Banerjee, A. 2005 - Financial Accounting, 2<sup>nd</sup> Ed, Excel Books.
- Ghosh, T. P, 2005, Fundamentals of Management Accounting, Excel Books

# ECONOMIC ANALYSIS

**Course Code: MBT 107**

**Credit Units: 04**

## **Course Objective:**

The objective of this course is to familiarize the students with theoretical concepts of modern Economic Analysis so that they can use these as inputs in Managerial Decision making process. The emphasis should be laid on the understanding of key Economic Variables both at micro and macro levels, which influence the business operations and strategies of the firm and business environment under which they operate.

## **Course Contents:**

### **Module I: Nature of Economic Analysis**

Introduction - Scarcity and Efficiency, Tools and principles of Micro economic analysis, Concept of opportunity cost, Discounting, Time perspective, Risk and uncertainty, Marginal and incremental concept, Relationship to the decision science.

### **Module II: Theory of Demand and Supply**

Demand Analysis -Meaning of demand, law of demand, factors affecting demand, movement and shift of demand, Elasticity of demand, Demand forecasting; Theory of Supply - Meaning, law of supply, factors affecting supply, Elasticity of supply

### **Module III: Cost and Production**

Theory of cost - Relevance for managers, Economies of scale: Internal and external, Cost function: Cost and output relationship, short run and long run; Production theory - Iso-quants, Iso-cost line, Producer's Equilibrium, Marginal Rate of Technical substitution, Least cost combination, Ridgelines, Returns to factor, returns to scale; Objectives of a firm - profit maximization, Baumol's model, Marris model.

### **Module IV: Market Conditions**

Price and out-put determination - Perfect competition; Monopolistic competition - Product differentiation; Monopoly- Price discriminating monopolist; Oligopoly - Price rigidity, kinked demand curve, Interdependence, Cournot's Model, Price leadership

### **Module V: Concepts of Macro Economics**

Circular flow of income and money, National Income Analysis, Keynesian model of National Income Determination, Saving and Consumption Function, Concept of Investment Multiplier, Demand and Supply of Money, Inflation and Deflation, Monetary and fiscal policies.

### **Module VI: International Market**

Theories of International Trade – Comparative cost, H-O theory, Foreign Exchange Market - Functions, Exchange Rate determination. Flexible and Fixed Rates of Exchange, Spot and Forward Exchange Rates, Managed Floats. Intervention by RBI in Forex Market, A Case For and Against Full convertibility of Indian Rupee

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
<b>Weightage (%)</b>	15	5	10	70

## **Text & References:**

### **Text:**

- Gupta, G.S. 2006, Managerial Economics, 1<sup>st</sup> Edition, Tata McGraw Hill
- Peterson, H.C and Lewis, W.C. 2005, Managerial Economics, 4<sup>th</sup> Edition, Prentice Hall of India

### **References:**

- R Ferguson, R., Ferguson, G.J and Rothschild, R. 1993 Business Economics Macmillan.
- Varshney, R. L and Maheshwari, 1994 Managerial Economics, S Chand and Co.
- Koutsoyiannis, A. Modern Economics, Third Edition.
- Chandra, P.2006, Project: Preparation Appraisal Selection Implementation and Review, 6<sup>th</sup> Edition, Tata McGraw Hill.
- Goldfield, S. M and Chandler, L. V. The Economics of Money and Banking.
- Salvatore, D, International Economics, 9<sup>th</sup> Edition, John Wiley & Sons.

# QUANTITATIVE APPLICATIONS IN MANAGEMENT

**Course Code: MBT 108**

**Credit Units: 03**

## **Course Objective:**

The aim of this course is to develop the understanding of the various Statistical models and Optimization Techniques used for decisions making in the functions of the management of any organization using contemporary computer-based technology

## **Course Contents:**

### **Module I: Introduction**

Application of Statistics in Business & Management; Basic Concepts of Statistical Studies: Population, Variable and Parameter, Sample; Classification of Data; Introduction to SPSS, SAS and other Statistical Software Packages. Diagrammatic & Graphical Presentation of Data: Bar Diagram, Histogram, Pie – Diagram, Frequency Polygons, and Ogives.

### **Module II: Summary Statistics**

Measures of Central Tendency: Arithmetic Mean, Weighted Mean, Median and Mode  
Measures of Dispersion: Range, Average Deviation, Standard Deviation, Variance and Coefficient of Variation.

### **Module III: Forecasting Techniques**

Simple Correlation & Regression Analysis, Time Series Analysis- Trend Analysis, Cyclical Analysis, Seasonal Analysis, Irregular Variation

### **Module IV: Probability & Testing of Hypothesis**

Introduction of Probability Theories, Concepts, Addition & Multiplication Theorems, Probability Distributions, Sampling & Sampling Distribution, Null Hypothesis & Alternative Hypothesis, t-test, F-test, Non-parametric Tests ( $\chi^2$  Test)

### **Module V: Decision Theory**

Introduction of Decision Theory, Decision Environments, Decision Making under Uncertainty- Maximax, Maximin, Minimax, Regret & Laplace Criterion, Decision Making under Risk- EMV & EOL.

### **Module VI: Linear Programming**

Introduction of Operations Research, Scope and Models in Operations Research, Introduction of Linear Programming, Formulation of LPP, Solution of LPP- Graphical Method & Simplex Procedure, Duality. Introduction of Transportation Problems, Procedure of finding optimal solution, Assignment Problem & its solution.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Levin R.I. & Rubin S.R. 2005, Statistics for Management, 7<sup>th</sup> Ed. Prentice Hall Of India
- Taha H. A. 2007, Operations Research: An Introduction, 8<sup>th</sup> Ed. Prentice Hall of India

### **References:**

- Gupta S.P.& Gupta M.P. 2006, Business Statistics, 10<sup>th</sup> Ed. Sultan Chand & Sons
- Kapoor V.K. 2006, Operations Research, 5<sup>th</sup> Ed. Sultan Chand & Sons
- Sharma J.K. 2006, Operations Research: Theory & Application, Mac Millan India Ltd.
- Gupta S.P., Statistical Techniques, Sultan Chand & Sons.
- Grobner D.F. & Shannon P.W., Essential of Business Statistics: A Decision Making Approach, MacMillan College Publishing Co.

# BIO-INSTRUMENTATION LAB

**Course Code: MBT 120**

**Credit Units: 01**

## Course Objective:

Bioinstrumentation is a course to impart knowledge of Biotechnology Instruments, their use, maintenance and analysis of bio-molecules, laboratory practice using pH meters, preparing solutions, and performing separatory techniques including emphasis in electrophoresis, spectrophotometry, and chromatography. Knowledge in this area is directly applicable for careers in the fields of medicine, agriculture, and environment.

## Course Contents:

### Module I: Bioanalytical Techniques

Preparation of Solutions, Titration curve, pKa value determination and Buffer preparation

### Module II: Spectrophotometric Techniques

Carbohydrate- Quantitative estimation of reducing sugars

Proteins- Quantitative test of protein by Lowry method

Nucleic acids- Estimation of DNA, RNA

### Module III: Chromatography

Ascending and Radial Paper Chromatography

### Module IV: Electrophoresis

Separation of proteins by SDS-PAGE, agarose gel electrophoresis

### Module V: Basic techniques in microbiology

Introduction to aseptic techniques in the lab- Sterilization of surface and glass wares, Media sterilization, Inoculation techniques: streaking, pour-plating, spreading.

## Examination Scheme:

IA			EE			
Class Test (Practical Based)	Mid Term Viva	Attendance	Major Experiment	Minor Experiment/Spotting	Practical Record	Viva
15	10	05	35	15	10	10

## Text & References:

### Text:

- Practical Biochemistry, Singh and Sawhney
- Experiments in Microbiology, K. R. Aneja, New age International Publishers

### References:

- Methods in Biotechnology by Schmander
- Principles & Practice of Bioanalysis, Richard F. Venn

# BUSINESS COMMUNICATION - I

**Course Code: MBT 142**

**Credit Units: 01**

## **Course Objective:**

One cannot 'not communicate'. This course is designed to facilitate our young Amityans to communicate effectively by emphasizing on practical communication through refurbishing their existing language skills and also to bring one and all to a common take-of level.

## **Course Contents:**

### **Module I: Fundamentals of communication**

Relevance of communication  
Effective communication  
Models of communication  
Effective use of language

### **Module II: Tools of communication**

Proficiency in English – The international  
Language of business  
Building vocabulary  
(Denotative & connotative)  
Extensive vocabulary drills  
(Synonyms / Antonyms / Homonyms)  
One Word substitution  
Idioms & phrases  
Mechanics and Semantics of sentences  
Writing sentences that really communicate  
(Brevity, Clarity, and Simplicity)  
Improving the tone and style of sentences

### **Module III: Barriers to Effective use of language**

Avoiding clichés  
Removing redundancies  
Getting rid of ambiguity  
Euphemism  
Jargons  
Code switching

## **Examination Scheme:**

<b>Components</b>	<b>CT1</b>	<b>CT2</b>	<b>CAF</b>	<b>V</b>	<b>GD</b>	<b>GP</b>	<b>A</b>
<b>Weightage (%)</b>	20	20	25	10	10	10	5

CAF – Communication Assessment File

GD – Group Discussion

GP – Group Presentation

## **Text & References:**

- Working in English, Jones, Cambridge
- Business Communication, Raman –Prakash, Oxford
- Echoes: Jha Madhulika: Orient Longman
- Practical English Usage, Swan M, Cambridge

**BEHAVIOURAL SCIENCE - I**  
**(SELF-DEVELOPMENT AND INTERPERSONAL SKILLS)**

**Course Code:** MBT 143

**Credit Units: 01**

**Course Objective:**

This course aims at imparting an understanding of:  
Self and the process of self exploration  
Learning strategies for development of a healthy self esteem  
Importance of attitudes and their effect on work behaviour  
Effective management of emotions and building interpersonal competence.

**Course Contents:**

**Module I: Understanding Self**

Formation of self concept  
Dimension of Self  
Components of self  
Self Competency

**Module II: Self-Esteem: Sense of Worth**

Meaning and Nature of Self Esteem  
Characteristics of High and Low Self Esteem  
Importance & need of Self Esteem  
Self Esteem at work  
Steps to enhance Self Esteem

**Module III: Emotional Intelligence: Brain Power**

Introduction to EI  
Difference between IQ, EQ and SQ  
Relevance of EI at workplace  
Self assessment, analysis and action plan

**Module IV: Managing Emotions and Building Interpersonal Competence**

Need and importance of Emotions  
Healthy and Unhealthy expression of emotions  
Anger: Conceptualization and Cycle  
Developing emotional and interpersonal competence  
Self assessment, analysis and action plan

**Module V: Leading Through Positive Attitude**

Understanding Attitudes  
Formation of Attitudes  
Types of Attitudes  
Effects of Attitude on  
Behaviour  
Perception  
Motivation  
Stress  
Adjustment  
Time Management  
Effective Performance  
Building Positive Attitude

**Module VI: End-of-Semester Appraisal**

Viva based on personal journal  
Assessment of Behavioural change as a result of training  
Exit Level Rating by Self and Observer

**Text & References:**

- Towers, Marc: Self Esteem, 1<sup>st</sup> Edition 1997, American Media
- Pedler Mike, Burgoyne John, Boydell Tom, A Manager's Guide to Self-Development: Second edition, McGraw-Hill Book company.



- Covey, R. Stephen: Seven habits of Highly Effective People, 1992 Edition, Simon & Schuster Ltd.
- Khera Shiv: You Can Win, 1<sup>st</sup> Edition, 1999, Macmillan
- Gegax Tom, Winning in the Game of Life: 1<sup>st</sup> Edition, Harmony Books
- Chatterjee Debashish, Leading Consciously: 1998 1<sup>st</sup> Edition, Viva Books Pvt. Ltd.
- Dr. Dinkmeyer Don, Dr. Losoncy Lewis, The Skills of Encouragement: St. Lucie Press.
- Singh, Dalip, 2002, Emotional Intelligence at work; First Edition, Sage Publications.
- Goleman, Daniel: Emotional Intelligence, 1995 Edition, Bantam Books
- Goleman, Daniel: Working with E.I., 1998 Edition, Bantam Books.

# FRENCH - I

**Course Code: MBT 144**

**Credit Units: 02**

## **Course Objective:**

To familiarize the students with the French language

- with the phonetic system
- with the accents
- with the manners
- with the cultural aspects

To enable the students

- to establish first contacts
- to identify things and talk about things

## **Course Contents:**

**Unité 1, 2: pp. 01 to 37**

### **Contenu lexical: Unité 1: Premiers contacts**

1. Nommer des objets, s'adresser poliment à quelqu'un
2. se présenter, présenter quelqu'un
3. entrer en contact : dire tu ou vous, épeler
4. dire où on travaille, ce qu'on fait
5. communiquer ses coordonnées

### **Unité 2: Objets**

1. identifier des objets, expliquer leur usage
2. Dire ce qu'on possède, faire un achat, discuter le prix.
3. Monter et situer des objets
4. Décrire des objets
5. comparer des objets, expliquer ses préférences

### **Contenu grammatical:**

1. articles indéfinis, masculin et féminin des noms, pluriel des noms
2. Je, il, elle sujets, verbes parler, habiter, s'appeler, être, avoir, masculin et féminin des adjectifs de nationalité
3. tu, vous sujets, verbes parler, aller, être, c'est moi/c'est toi
4. verbes faire, connaître, vendre, c'est/il est + profession, qui est-ce ? qu'est-ce que ... ?
5. article défini, complément du nom avec de, quel interrogatif
6. adjectifs possessifs (1), pour + infinitif
7. verbe avoir, ne...pas/pas de, question avec est-ce que ?, question négative, réponse Si
8. Prépositions de lieu, il y a/qu'est-ce qu'il y a
9. accord et place des adjectifs qualificatifs, il manque...
10. comparatifs et superlatifs, pronoms toniques, pronom on

## **Examination Scheme:**

<b>Components</b>	<b>CT1</b>	<b>CT2</b>	<b>C</b>	<b>I</b>	<b>V</b>	<b>A</b>
<b>Weightage (%)</b>	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

## **Text & References:**

- le livre à suivre : Français.Com (Débutant)

# GERMAN - I

**Course Code: MBT 145**

**Credit Units: 02**

## **Course Objective:**

To enable the students to converse, read and write in the language with the help of the basic rules of grammar, which will later help them to strengthen their language.

To give the students an insight into the culture, geography, political situation and economic opportunities available in Germany

## **Course Contents:**

### **Module I: Introduction**

Self introduction: heissen, kommen, wohnen, lernen, arbeiten, trinken, etc.

All personal pronouns in relation to the verbs taught so far.

Greetings: Guten Morgen!, Guten Tag!, Guten Abend!, Gute Nacht!, Danke sehr!, Danke!, Vielen Dank!, (es tut mir Leid!),

Hallo, wie geht's?: Danke gut!, sehr gut!, prima!, ausgezeichnet!,  
Es geht!, nicht so gut!, so la la!, miserabel!

### **Module II: Interviewspiel**

To assimilate the vocabulary learnt so far and to apply the words and phrases in short dialogues in an interview – game for self introduction.

### **Module III: Phonetics**

Sound system of the language with special stress on Diphthongs

### **Module IV: Countries, nationalities and their languages**

To make the students acquainted with the most widely used country names, their nationalities and the language spoken in that country.

### **Module V: Articles**

The definite and indefinite articles in masculine, feminine and neuter gender. All Vegetables, Fruits, Animals, Furniture, Eatables, modes of Transport

### **Module VI: Professions**

To acquaint the students with professions in both the genders with the help of the verb “sein”.

### **Module VII: Pronouns**

Simple possessive pronouns, the use of my, your, etc.

The family members, family Tree with the help of the verb “to have”

### **Module VIII: Colours**

All the color and color related vocabulary – colored, colorful, colorless, pale, light, dark, etc.

### **Module IX: Numbers and calculations – verb “kosten”**

The counting, plural structures and simple calculation like addition, subtraction, multiplication and division to test the knowledge of numbers.

“Wie viel kostet das?”

### **Module X: Revision list of Question pronouns**

W – Questions like who, what, where, when, which, how, how many, how much, etc.

## **Examination Scheme:**

Components	CT1	CT2	C	I	V	A
Weightage (%)	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

## **Text & References:**

- Wolfgang Hieber, Lernziel Deutsch
- Hans-Heinrich Wangler, Sprachkurs Deutsch
- Schulz Griesbach, Deutsche Sprachlehre für Ausländer

- P.L Aneja, Deutsch Interessant- 1, 2 & 3
- Rosa-Maria Dallapiazza et al, Tangram Aktuell A1/1,2
- Braun, Nieder, Schmøe, Deutsch als Fremdsprache 1A, Grundkurs

# SPANISH – I

**Course Code: MBT 146**

**Credit Units: 02**

## **Course Objective:**

To enable students acquire the relevance of the Spanish language in today's global context, how to greet each other. How to present / introduce each other using basic verbs and vocabulary

## **Course Contents:**

### **Module I**

A brief history of Spain, Latin America, the language, the culture...and the relevance of Spanish language in today's global context.

Introduction to alphabets

### **Module II**

Introduction to '*Saludos*' (How to greet each other. How to present / introduce each other).

Goodbyes (*despedidas*)

The verb *llamarse* and practice of it.

### **Module III**

Concept of Gender and Number

Months of the years, days of the week, seasons. Introduction to numbers 1-100, Colors, Revision of numbers and introduction to ordinal numbers.

### **Module IV**

Introduction to *SER* and *ESTAR* (both of which mean To Be). Revision of '*Saludos*' and '*Llamarse*'. Some adjectives, nationalities, professions, physical/geographical location, the fact that spanish adjectives have to agree with gender and number of their nouns. Exercises highlighting usage of *Ser* and *Estar*.

### **Module V**

Time, demonstrative pronoun (*Este/esta, Aquel/aquella* etc)

### **Module VI**

Introduction to some key AR /ER/IR ending regular verbs.

## **Examination Scheme:**

<b>Components</b>	<b>CT1</b>	<b>CT2</b>	<b>C</b>	<b>I</b>	<b>V</b>	<b>A</b>
<b>Weightage (%)</b>	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

## **Text & References:**

- Español, En Directo I A
- Español Sin Fronteras

# JAPANESE - I

**Course Code:** MBT 147

**Credit Units: 02**

## **Course Objective:**

To enable the students to learn the basic rules of grammar and Japanese language to be used in daily life that will later help them to strengthen their language.

## **Course Contents:**

### **Module I: Salutations**

Self introduction, Asking and answering to small general questions

### **Module II: Cardinal Numbers**

Numerals, Expression of time and period, Days, months

### **Module III: Tenses**

Present Tense, Future tense

### **Module IV: Prepositions**

Particles, possession, Forming questions

### **Module V: Demonstratives**

Interrogatives, pronoun and adjectives

### **Module VI: Description**

Common phrases, Adjectives to describe a person

### **Module VII: Schedule**

Time Table, everyday routine etc.

### **Module VIII: Outings**

Going to see a movie, party, friend's house etc.

## **Learning Outcome**

- Students can speak the basic language describing above mentioned topics

## **Methods of Private study /Self help**

- Handouts, audio-aids, and self-do assignments and role-plays will support classroom teaching

## **Examination Scheme:**

Components	CT1	CT2	C	I	V	A
Weightage (%)	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

## **Text & References:**

### **Text:**

- Teach yourself Japanese

### **References:**

- Shin Nihongo no kiso 1

# CHINESE – I

**Course Code: MBT 148**

**Credit Units: 02**

## **Course Objective:**

There are many dialects spoken in China, but the language which will help you through wherever you go is Mandarin, or Putonghua, as it is called in Chinese. The most widely spoken forms of Chinese are Mandarin, Cantonese, Gan, Hakka, Min, Wu and Xiang. The course aims at familiarizing the student with the basic aspects of speaking ability of Mandarin, the language of Mainland China. The course aims at training students in practical skills and nurturing them to interact with a Chinese person.

## **Course Contents:**

### **Module I**

Show pictures, dialogue and retell.

Getting to know each other.

Practicing chart with Initials and Finals. (CHART – The Chinese Phonetic Alphabet Called “Hanyu Pinyin” in Mandarin Chinese.)

Practicing of Tones as it is a tonal language.

Changes in 3<sup>rd</sup> tone and Neutral Tone.

### **Module II**

Greetings

Let me Introduce

The modal particle “ne”.

Use of Please ‘qing’ – sit, have tea ..... etc.

A brief self introduction – Ni hao ma? Zaijian!

Use of “bu” negative.

### **Module III**

Attributives showing possession

How is your Health? Thank you

Where are you from?

A few Professions like – Engineer, Businessman, Doctor, Teacher, Worker.

Are you busy with your work?

May I know your name?

### **Module IV**

Use of “How many” – People in your family?

Use of “zhe” and “na”.

Use of interrogative particle “shenme”, “shui”, “ma” and “nar”.

How to make interrogative sentences ending with “ma”.

Structural particle “de”.

Use of “Nin” when and where to use and with whom. Use of guixing.

Use of verb “zuo” and how to make sentences with it.

### **Module V**

Family structure and Relations.

Use of “you” – “mei you”.

Measure words

Days and Weekdays.

Numbers.

Maps, different languages and Countries.

## **Examination Scheme:**

<b>Components</b>	<b>CT1</b>	<b>CT2</b>	<b>C</b>	<b>I</b>	<b>V</b>	<b>A</b>
<b>Weightage (%)</b>	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

## **Text & References:**

- “Elementary Chinese Reader Part I” Lesson 1-10

# INDUSTRIAL BIOTECHNOLOGY

**Course Code: MBT 201**

**Credit Units: 03**

## **Course Objective:**

To apply the principles of basic microbiology on production of important compounds using micro-organisms.

## **Course Contents:**

### **Module I: Introduction**

Scope of Industrial Biotechnology

Isolation and screening of industrially important microbes, Strain development

### **Module II: Media**

Formulation, Sterilization, Growth kinetics, Thermal death kinetics, Inoculum development, Bioreactor design, parts and their functions.

### **Module III: Fermentation**

Batch, Fed-batch, CSTR, Fluidized bed, Immobilized cell, Air-lift and Packed bed reactor. Liquid-state, Solid-state and Submerged fermentation. Immobilization techniques.

**Fermentation Processes:** Control and monitoring, On-line and Off-line control, Computers in bioprocess control systems, Product Recovery.

### **Module IV: Microbial production of industrial enzymes**

Cellulase, Amylase, Protease.

### **Module V: Production of primary and secondary metabolites**

Ethanol, Citric acid, Biomass

Vitamins- A, B<sub>12</sub>, Antibiotics- Penicillin, Streptomycin.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Biotechnology: A Textbook of Industrial Microbiology by Crueger and Crueger, Panima Publishers.
- Industrial Microbiology, Prescott & Dunn's, by Reed, CBS Publishers

### **References:**

- Principles of fermentation technology by Stanbury, Whitaker, hall.
- Industrial Microbiology by Casida, New Age International Publishers.



# IMMUNO-TECHNOLOGY AND DIAGNOSTICS

**Course Code: MBT 202**

**Credit Units: 03**

## **Course Objective:**

To introduce the mechanism of defense system, the basic knowledge of immunology and involved techniques is required. Our system is quite capable to encounter any foreign object producing large variety of antibodies. Gene for the regulation and production of interleukins has been traced and the methods for vaccine-synthesis have been commercialized. All these require an in depth knowledge of immunotechnology

## **Course Contents:**

### **Module I**

An overview of immunology and its components.

### **Module II**

Immunity to pathogens and vaccinology.

### **Module III**

Analytical procedures for the study of antigen and antibody interactions.

### **Module IV**

Hybridoma technology and antibody engineering.

### **Module V**

Gene transfer technology and transplantation.

## **Examination Scheme:**

<b>Components</b>	<b>CT</b>	<b>Attendance</b>	<b>Assignment/ Project/Seminar/Quiz</b>	<b>EE</b>
<b>Weightage (%)</b>	15	5	10	70

## **Text & References:**

### **Text:**

- Immunology by Kuby

### **References:**

- Benjamin E and Leskowitz S, "Immunology - A Short Course", Wiley Liss, NY, 1991.
- Roitt I, "Essential Immunology", Blackwell Scientific Publications, Oxford, 1991.

# ESSENTIALS OF BIOINFORMATICS

**Course Code: MBT 203**

**Credit Units: 03**

## **Course Objective:**

To outline the current and potential applications of bioinformatics and the legal, ethical and commercial aspects of using biological data. It will prepare students for the research and business aspects of bioinformatics.

## **Course Contents:**

### **Module I: Fundamentals of Bioinformatics & Information Technology**

Introduction to bioinformatics, Experimental sources of biological data, Publicly available databases, Overview of Operating systems - including Windows and UNIX and programming languages, Networks- including the Intranets and the Internet

### **Module II: Methods & Tools**

Visualization of sequence data, Sequence alignment, Homology searching - including BLAST, Gene expression informatics, Introduction to gene finding, Overview of Proteomics

### **Module III: Business of Research**

Research methodology (focusing on computer-based research), Case studies of areas of current bioinformatics research, Routes to research funding (academic and commercial), Bioinformatics business models, Intellectual property rights and its role in bioinformatics.

### **Module IV: Introduction to Perl**

Perl basics-Data Types and Operators, Basic Perl Data structures, Perl Build-in Functions, Bio-Perl in Bioinformatics.

### **Module V: Genomics**

Introduction to genomics, genome sequencing, human genome project, benefits, Ethical, legal and social issues, softwares and tools for genomics study.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Introduction to Bioinformatics by T. Attwood and D. Parry-Smith. Prentice Hall
- Mastering Perl for Bioinformatics James D. Tisdall, O'Reilly
- Bioinformatics: Methods And Applications Genomics, Proteomics And Drug Discovery Rastogi, S C, Rastogi, Parag, Mendiratta, Namita

### **References:**

- Introduction to Computational Biology: Maps, Sequences and Genomes by M. Waterman. Chapman and Hall
- Sequence Analysis in a Nutshell: A Guide to Common Tools and Databases, Scott Markel, Darryl Leon.
- Bioinformatics: Sequence, Structure and Databanks: A Practical Approach (The Practical Approach Series, 236), Des Higgins (Editor), Willie Taylor (Editor).
- Genomic Perl by Rex A. Dwyer
- Beginning Perl for Bioinformatics James D. Tisdall, O'Reilly

# PHARMACEUTICAL MANAGEMENT

**Course Code: MBT 204**

**Credit Units: 03**

## **Course Objective:**

The objective of this course to apply the basic concepts in the specific field of Pharmaceutical Biotechnology Industry. The student will gain insight into the working of a pharma industry, various classes of biotech products and the regulations governing production and marketing of pharmaceutical products.

## **Course Contents:**

### **Module I: Pharmaceutical Industry: History, issues and challenges**

Evolution of pharmaceutical industry  
Role of Pharmaceutical Industry  
Organization & governance of R & D  
Global Pharmaceutical Industry review

### **Module II: Strategic Marketing in Pharmaceutical Industry**

Pharmaceutical marketing and economics  
Understanding Pharmaceutical value chain  
DPCA and its implications (effect on pricing)  
Marketing of Generic v/s OTC Drugs  
Retail opportunity in Pharmaceutical marketing  
Supply chain and logistics in Pharmaceutical sector

### **Module III: Nature of Pharmaceutical Industry and its Meta markets**

Management of healthcare industry  
Managing healthcare outcomes  
Healthcare economics  
Pathology laboratories and Testing Equipment Management  
Diagnostic v/s Prognostic approach in healthcare

### **Module IV: Quality Management and Ethics in Marketing Pharmaceutical Products**

Ethical challenges & consequences of non-compliance  
Pharmaceutical companies vigilance / Risk management/ Regulatory affairs/In-licensing  
International harmonization  
GMP in pharmaceutical manufacturing sector  
Third party manufacturing in pharmaceutical marketing

## **Examination Scheme:**

<b>Components</b>	<b>CT</b>	<b>Attendance</b>	<b>Assignment/ Project/Seminar/Quiz</b>	<b>EE</b>
<b>Weightage (%)</b>	15	5	10	70

## **Text & References:**

- Pharmaceutical Industrial Management by Vidya Sagar, Pharma Book Syndicate.
- Project Management for the Pharmaceutical Industry by Laura Brown and Tony Grundy
- Pharma Marketing by Harris G. and James K. B., Quiller Management.

# FINANCIAL MANAGEMENT

**Course Code: MBT 205**

**Credit Units: 04**

## **Course Objective:**

The objective of this course is to develop an understanding of short-term and long-term financial decisions of a firm and various financial tools used in taking these decisions. It is also aimed to develop the understanding of the financial environment in which a company operates and how it copes with it.

## **Course Contents:**

### **Module I: Introduction**

A Framework for Financial Decision-Making- Financial Environment, Changing Role of Finance Managers, Objectives of the firm

### **Module II: Valuation Concepts**

Time Value of Money, Risk and Return, Financial and Operating Leverage

### **Module III: Financing Decisions**

Capital Structure and Cost of Capital, Marginal Cost of Capital

### **Module IV: Capital Budgeting**

Estimation of Cash Flows, Criteria for Capital Budgeting Decisions, Issues Involved in Capital Budgeting, Risk analysis in Capital Budgeting – An Introduction

### **Module V: Working Capital Management**

Factors Influencing Working Capital Policy, Operating Cycle Analysis, Management of Inventory, Management of Receivables, Management of Cash and Marketable Securities, Financing of Working Capital.

### **Module VI: Dividend Policy Decisions**

An introduction: Different Schools of Thought on Dividend Policy

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Chandra, P. 2006, Financial Management: Theory and Practice, 6<sup>th</sup> Ed., Tata McGraw Hill.

### **References:**

- Damodaran, A. 2004, Corporate Finance: Theory and Practice, 2<sup>nd</sup> Ed., Wiley & Sons.
- Van Horne, J.C. 2006, Financial Management and Policy, 12<sup>th</sup> Ed., Prentice Hall of India.
- Brearly, R. A. and Myers, S. C. 2006, Principles of Corporate Finance, 8<sup>th</sup> Ed., Tata McGraw Hill
- Pike, R and Neale, B. 1998, Corporate Finance and Investment: Decisions and Strategies, Prentice Hall of India
- Rustagi, R.P. 1999, Financial Management: Theory, Concepts and Problems, Galgotia Publishing Company.
- Pandey, I.M. 1999, Financial Management, 9<sup>th</sup> Ed., Vikas Publishing House

# MARKETING RESEARCH AND REPORT PREPARATION

**Course Code: MBT 206**

**Credit Units: 04**

## **Course Objective:**

To provide an exposure to the students pertaining to the nature and extent of research orientation, which they are expected to possess when they enter the industry as practitioners and to give them an understanding of the basic techniques and tools of marketing research and to train the students in evaluating and developing the marketing information system.

## **Course Contents:**

### **Module I: Nature and scope of marketing research**

Marketing research as input in decision making process, Marketing research and marketing information system. Applications of marketing research, Planning a research project: Problem identification and formulation. Research Design: Exploratory, Descriptive and Experimental research designs, Market research on the Internet

### **Module II: Data collection methods**

Observation Methods and Questionnaire Method, Questionnaire Design: Steps in constructing a questionnaire, types of questions, Attitude measurement and Scaling techniques: Ratio, interval, ordinal and nominal scales. Likert's scale, Thurstone scale, Semantic differentiation method etc. Projective techniques. Multidimensional scaling and perceptual mapping, Sampling decisions: Sampling frame, sample selection methods- Probability and non- probability, sample size, Application of sampling methods to marketing problems.

### **Module III: Data collection and field force**

Field work procedure. Common sources of error in the field work. Minimizing fieldwork errors, Tabulation of the collected data

### **Module IV: Data analysis - I**

Tests of significance Z, t, F and chi-square, Data analysis-II: Correlation and Regression techniques, Data analysis-III: Over-view of Multivariate Techniques-Factor analysis, conjoint analysis, Cluster analysis, Research presentation and Research process evaluation: Report writing- Types of research report. Evaluation of the research procedure, selected applications of marketing research: Identifying market segments, Product research, Advertising research

### **Module V: Reporting the Results**

Pre-Writing Considerations, Format of the Marketing research report, Common Problems Encountered when preparing the marketing research report. Presenting the Research Report

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Boyd, Harper W; Westphall, Ralph and Stasch, Stanely F, Market Research- Text and Cases, Latest Edition, Richard D. Irwin, Inc. Homewood, Illinois
- Aaker, David A; Kumar, V and George S. 1999, Marketing Research, Sixth Edition, Jhon Wiley And Sons

### **References:**

- Luck, David J And Rubin, Ronald S, Marketing Research, Seventh Edition, Prentice Hall Of India
- Beri, Gc., Marketing Research, Second Edition, Tata McGraw Hill
- Thomas H. Wancott and R. Wancott, Introductory Statistics for Business and Economics, John Wiley And Sons, New York.
- Pal E. Green and Yorum Wind, New Ways To Measure Consumer Judgements, Harvard Bsiness Review 53, August 1975

### **List of Cases:**

- Royal Bank of India
- Standard Motor Corporation
- Vero cycles

- Chocovita Drink
- Decaffinated coffee
- Casual shoe case
- Indian Paints
- Indian Hotels
- Surya Roshni case

***Software:***

- Students can use STATVIEW and SPSS 10.0 for analyzing the data for marketing research.
- The software is available in the computer lab.

# BUSINESS ENVIRONMENT AND LAW

**Course Code: MBT 207**

**Credit Units: 04**

## **Course Objective:**

The objective of this course is to develop in students the understanding of the role of business environment in general and the legal environment in particular in management decision making. It aims at giving insight into various Business and Economic Laws so that the students are able to interpret the provisions of some of the important laws and apply the same in commercial and industrial organizations.

## **Course Contents:**

### **Module I: Legal Environment of Business**

Environment of Business, Its importance, Change in business environment consequent to economic reform, industrial policy, trade policy, macro reform, MNC's role, financial services, private sector, Legal environment of business.

### **Module II: Indian Contract Act, 1872**

Nature and kinds of Contracts, Concepts related to offer, Acceptance and Consideration, Principles Governing Capacity of Parties and Free Consent, Legality of Objects, Performance and Discharge of Contract, Breach of Contract and its Remedies, Basic Elements of Law Relating to Agency, Guarantee and Pledge.

### **Module III: Law of Torts**

Meaning of tort – Contractual and Tortious Liability, Application of Tortious Liability in Business Situations.

### **Module IV: Indian Sale of Goods Act, 1930**

Sale and Agreement to Sell, Hire Purchase – Pledge – Mortgage – Hypothecation Lease, Goods – Different types of Goods, Passing of Property in Goods, Conditions and Warranties, Doctrine of Caveat emptor, Rights of an unpaid Seller.

### **Module V: Negotiable Instruments Act, 1881**

Meaning of Negotiability and Negotiable Instruments – Cheques Bill of Exchange and Promissory Note – Crossing of Cheques – Endorsement – Dishonour of Cheques.

### **Module VI: Elements of Company Law**

Meaning and types of companies, Formation of a company, Memorandum and Articles of Association, Prospectus and Issue of Shares, Share Capital and Shareholders, Company Meetings and Proceedings, Powers and Liabilities of Directors and Winding up of Company.

### **Module VII: Miscellaneous Acts**

Consumer Protection Act, 1986 – Need for Consumer Protection, Intellectual Property Laws (IPR) – Overview of Law & Procedure relating to Patents, Trade marks & Copyrights, Infringement, Provisions of Central Sales Tax Act and Central Excise Act & Customs Act 1962, Provisions of Income Tax Act relating to individuals, Calculation of Tax Liability under the head Salary Income.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

- Gulshan S. S, Elements of Mercantile Law, Excel Books, N. Delhi
- Suresh Bedi, Business Environment, Excel Books, N. Delhi

# INDUSTRIAL BIOTECHNOLOGY LAB

**Course Code: MBT 220**

**Credit Units: 01**

## **Course Objective:**

This course acquaints the students in applied aspects of microbiology with laboratory scale production of important compounds using micro-organisms.

## **Course Contents:**

### **Module I**

Isolation of microorganisms from air, water and soil.

### **Module II**

Determination of growth curve of microorganisms.

### **Module III**

Microbial production of ethanol.

### **Module IV**

Production, extraction and estimation of protease/ cellulase/ amylase.

### **Module V**

Cell/ enzyme immobilization by Ca-alginate entrapment method.

## **Examination Scheme:**

IA			EE			
Class Test (Practical Based)	Mid Term Viva	Attendance	Major Experiment	Minor Experiment/Spotting	Practical Record	Viva
15	10	05	35	15	10	10

## **Text & References:**

### **Text:**

- Experiments in Microbiology, K. R. Aneja, New age International Publishers

### **References:**

- Microscopic Techniques in Biotechnology, Michael Hoppert



# BUSINESS COMMUNICATION - II

**Course Code: MBT 242**

**Credit Units: 01**

## **Course Objective:**

This course is designed to hone the PR skills of the budding managers and enable them to be an integral part of the corporate communication network. The Verbal Communication (oral and written) will be the lingua franca of this endeavour.

## **Course Contents:**

### **Module I: Communication in Practice**

Verbal Communication

1. Communication Networks
2. Developing writing skills

*Inter-office communication*

The business letters

E mail – Netiquette(etiquette on the mail)

*Intra-office communication*

Memos

Notices

Circulars

Agenda and Minutes

Business Report writing

*Resume writing*

### **Module II: Cross Functional Communication**

Marketing/ Integrated marketing communication

Project management communication

Human Resource communication

Financial Communication

### **Module III: Communication for Public Relations**

Functions and activities of PR

Reputation Management

Building Corporate Image and Identity

Negotiation Techniques

## **Examination Scheme:**

<b>Components</b>	<b>CT1</b>	<b>CT2</b>	<b>CAF</b>	<b>V</b>	<b>GD</b>	<b>GP</b>	<b>A</b>
<b>Weightage (%)</b>	20	20	25	10	10	10	5

CAF – Communication Assessment File

GD – Group Discussion

GP – Group Presentation

## **Text & References:**

- Business Communication, Raman – Prakash, Oxford
- The Oxford Handbook of Commercial Correspondence, Ashley A, Oxford Business Communication for Managers: An Advanced Approach, Penrose, Thomson
- Business Communication, Krizan, Thomson
- Understanding Human Communication,9/e, Adler R Oxford

**BEHAVIOURAL SCIENCE - II**  
**(BEHAVIOURAL COMMUNICATION AND RELATIONSHIP**  
**MANAGEMENT)**

**Course Code: MBT 243**

**Credit Units: 01**

**Course Objective:**

This course aims at imparting an understanding of:  
Process of Behavioural communication  
Aspects of interpersonal communication and relationship  
Management of individual differences as important dimension of IPR

**Course Contents:**

**Module I: Behavioural Communication**

Scope of Behavioural Communication  
Process – Personal, Impersonal and Interpersonal Communication  
Guidelines for developing Human Communication skills  
Relevance of Behavioural Communication in relationship management

**Module II: Managing Individual Differences in Relationships**

Principles  
Types of issues  
Approaches  
Understanding and importance of self disclosure  
Guidelines for effective communication during conflicts

**Module III: Communication Climate: Foundation of Interpersonal Relationships**

Elements of satisfying relationships  
Conforming and Disconfirming Communication  
Culturally Relevant Communication  
Guideline for Creating and Sustaining Healthy Climate

**Module IV: Interpersonal Communication**

Imperatives for Interpersonal Communication  
Models – Linear, Interaction and Transaction  
Patterns – Complementary, Symmetrical and Parallel  
Types – Self and Other Oriented  
Steps to improve Interpersonal Communication

**Module V: Interpersonal Relationship Development**

Relationship circle – Peer/ Colleague, Superior and Subordinate  
Initiating and establishing IPR  
Escalating, maintaining and terminating IPR  
Direct and indirect strategies of terminating relationship  
Model of ending relationship

**Module VI: End-of-Semester Appraisal**

Viva based on personal journal  
Assessment of Behavioural change as a result of training  
Exit Level Rating by Self and Observer

**Text & References:**

- Vangelist L. Anita, Mark N. Knapp, Inter Personal Communication and Human Relationships: Third Edition, Allyn and Bacon
- Julia T. Wood. Interpersonal Communication everyday encounter
- Simons, Christine, Naylor, Belinda: Effective Communication for Managers, 1997 1<sup>st</sup> Edition Cassell
- Harvard Business School, Effective Communication: United States of America
- Beebe, Beebe and Redmond; Interpersonal Communication, 1996; Allyn and Bacon Publishers.

## FRENCH - II

**Course Code:** MBT 244

**Credit Units: 02**

### **Course Objective:**

To enable the student

- to talk about his time schedule
- to talk about travel

### **Course Contents:**

**Unité 3, 4: pp. 42 to 72:**

#### **Contenu lexical: Unité 3: Emploi du temps**

1. demander et donner l'heure, des horaires
2. raconter sa journée
3. parler de ses habitudes au travail, de ses loisirs
4. dire la date, parler du temps qu'il fait
5. fixer rendez-vous (au téléphone par e-mail), réserver une table au restaurant

#### **Unité 4: Voyage**

1. réserver une chambre d'hôtel, demander la note
2. expliquer un itinéraire
3. parler de ses déplacements, situer sur une carte
4. exprimer un conseil, une interdiction, une obligation
5. acheter un billet de train, consulter un tableau d'horaires

#### **Contenu grammatical:**

1. question avec à quelle heure ? adjectifs démonstratifs
2. verbes pronominaux au présent, les prépositions à et de : aller à venir de
3. adverbes de fréquence, pourquoi... ? Parce que ... ?
4. expression indiquant la date, verbes impersonnels
5. verbe pouvoir + infinitif, le lundi, lundi prochain
6. adjectifs possessifs (2), adjectif tout
7. impératif présent (1), nombres ordinaux
8. questions avec est-ce que ? à et en + moyen de transport, en/au+pays
9. verbes devoir+infinitif, il faut+ infinitif, il est interdit de
10. verbes : aller, venir, partir , questions avec d'où, où, par où, à quel, de quel

### **Examination Scheme:**

Components	CT1	CT2	C	I	V	A
Weightage (%)	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

### **Text & References:**

- le livre à suivre : Français.Com (Débutant)

# GERMAN – II

**Course Code: MBT 245**

**Credit Units: 02**

## **Course Objective:**

To enable the students to converse, read and write in the language with the help of the basic rules of grammar, which will later help them to strengthen their language.

To give the students an insight into the culture, geography, political situation and economic opportunities available in Germany

Introduction to Grammar to consolidate the language base learnt in Semester I

## **Course Contents:**

### **Module I: Everything about Time and Time periods**

Time and times of the day.

Weekdays, months, seasons.

Adverbs of time and time related prepositions

### **Module II: Irregular verbs**

Introduction to irregular verbs like to be, and others, to learn the conjugations of the same, (fahren, essen, lessen, schlafen, sprechen und ähnliche).

### **Module III: Separable verbs**

To comprehend the change in meaning that the verbs undergo when used as such

Treatment of such verbs with separable prefixes

### **Module IV: Reading and comprehension**

Reading and deciphering railway schedules/school time table

Usage of separable verbs in the above context

### **Module V: Accusative case**

Accusative case with the relevant articles

Introduction to 2 different kinds of sentences – Nominative and Accusative

### **Module VI: Accusative personal pronouns**

Nominative and accusative in comparison

Emphasizing on the universal applicability of the pronouns to both persons and objects

### **Module VII: Accusative prepositions**

Accusative prepositions with their use

Both theoretical and figurative use

### **Module VIII: Dialogues**

Dialogue reading: 'In the market place'

'At the Hotel'

## **Examination Scheme:**

Components	CT1	CT2	C	I	V	A
Weightage (%)	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

## **Text & References:**

- Wolfgang Hieber, Lernziel Deutsch
- Hans-Heinrich Wangler, Sprachkurs Deutsch
- Schulz Griesbach, Deutsche Sprachlehre für Ausländer
- P.L Aneja, Deutsch Interessant- 1, 2 & 3
- Rosa-Maria Dallapiazza et al, Tangram Aktuell A1/1,2
- Braun, Nieder, Schmöe, Deutsch als Fremdsprache 1A, Grundkurs

## SPANISH – II

**Course Code: MBT 246**

**Credit Units: 02**

### **Course Objective:**

To enable students acquire more vocabulary, grammar, Verbal Phrases to understand simple texts and start describing any person or object in Simple Present Tense.

### **Course Contents:**

#### **Module I**

Revision of earlier modules.

#### **Module II**

Some more AR/ER/IR verbs. Introduction to root changing and irregular AR/ER/IR ending verbs

#### **Module III**

More verbal phrases (eg, Dios Mio, Que lastima etc), adverbs (*bueno/malo, muy, mucho, bastante, poco*). Simple texts based on grammar and vocabulary done in earlier modules.

#### **Module IV**

Possessive pronouns

#### **Module V**

Writing/speaking essays like my friend, my house, my school/institution, myself...descriptions of people, objects etc, computer/internet related vocabulary

### **Examination Scheme:**

<b>Components</b>	<b>CT1</b>	<b>CT2</b>	<b>C</b>	<b>I</b>	<b>V</b>	<b>A</b>
<b>Weightage (%)</b>	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

### **Text & References:**

- Español, En Directo I A
- Español Sin Fronteras

# JAPANESE - II

**Course Code: MBT 247**

**Credit Units: 02**

## **Course Objective:**

To enable the students to converse in the language with the help of basic particles and be able to define the situations and people using different adjectives.

## **Course Contents:**

### **Module I: Verbs**

Transitive verbs, intransitive verbs

### **Module II: More prepositions**

More particles, articles and likes and dislikes.

### **Module III: Terms used for instructions**

No parking, no smoking etc.

### **Module IV: Adverbs**

Different adverbial expression.

### **Module V: Invitations and celebrations**

Giving and receiving presents,  
Inviting somebody for lunch, dinner, movie and how to accept and refuse in different ways

### **Module VI: Comprehension's**

Short essay on Family, Friend etc.

### **Module VII: Conversations**

Situational conversations like asking the way, At a post office, family

### **Module VIII: Illness**

Going to the doctor, hospital etc.

## **Learning Outcome**

➤ Students can speak the language describing above-mentioned topics.

## **Methods of Private study /Self help**

- Handouts, audio-aids, and self-do assignments.
- Use of library, visiting and watching movies in Japan and culture center every Friday at 6pm.

## **Examination Scheme:**

<b>Components</b>	<b>CT1</b>	<b>CT2</b>	<b>C</b>	<b>I</b>	<b>V</b>	<b>A</b>
<b>Weightage (%)</b>	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

## **Text & References:**

### **Text:**

- Teach yourself Japanese

### **References:**

- Shin Nihongo no kiso 1

## CHINESE – II

**Course Code: MBT 248**

**Credit Units: 02**

### **Course Objective:**

Chinese is a tonal language where each syllable in isolation has its definite tone (flat, falling, rising and rising/falling), and same syllables with different tones mean different things. When you say, “ma” with a third tone, it mean horse and “ma” with the first tone is Mother. The course aims at familiarizing the student with the basic aspects of speaking ability of Mandarin, the language of Mainland China. The course aims at training students in practical skills and nurturing them to interact with a Chinese person.

### **Course Contents:**

#### **Module I**

Drills  
Practice reading aloud  
Observe Picture and answer the question.  
Tone practice.  
Practice using the language both by speaking and by taking notes.  
Introduction of basic sentence patterns.  
Measure words.  
Glad to meet you.

#### **Module II**

Where do you live?  
Learning different colors.  
Tones of “bu”  
Buying things and how much it costs?  
Dialogue on change of Money.  
More sentence patterns on Days and Weekdays.  
How to tell time. Saying the units of time in Chinese. Learning to say useful phrases like – 8:00, 11:25, 10:30 P.M. everyday, afternoon, evening, night, morning 3:58, one hour, to begin, to end ..... etc.  
Morning, Afternoon, Evening, Night.

#### **Module III**

Use of words of location like-li, wai hang, xia  
Furniture – table, chair, bed, bookshelf,.. etc.  
Description of room, house or hostel room.. eg what is placed where and how many things are there in it?  
Review Lessons – Preview Lessons.  
Expression ‘yao’, ‘xiang’ and ‘yaoshi’ (if).  
Days of week, months in a year etc.  
I am learning Chinese. Is Chinese difficult?

#### **Module IV**

Counting from 1-1000  
Use of “chang-chang”.  
Making an Inquiry – What time is it now? Where is the Post Office?  
Days of the week. Months in a year.  
Use of Preposition – “zai”, “gen”.  
Use of interrogative pronoun – “duoshao” and “ji”.  
“Whose”??? Sweater etc is it?  
Different Games and going out for exercise in the morning.

#### **Module V**

The verb “qu”  
Going to the library issuing a book from the library  
Going to the cinema hall, buying tickets  
Going to the post office, buying stamps  
Going to the market to buy things.. etc  
Going to the buy clothes ... Etc.  
Hobby. I also like swimming.  
Comprehension and answer questions based on it.

**Examination Scheme:**

<b>Components</b>	<b>CT1</b>	<b>CT2</b>	<b>C</b>	<b>I</b>	<b>V</b>	<b>A</b>
<b>Weightage (%)</b>	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

**Text & References:**

- “Elementary Chinese Reader Part I” Lesson 11-20



# STRATEGIC MANAGEMENT

**Course Code: MBT 301**

**Credit Units: 04**

## **Course Objective:**

The objective of this course is to develop an understanding of: the integrative role of all areas of management in business, the prescriptive and descriptive ideas of theorist's practitioners and researchers in the field, the principles of management and their relevance in business, the methods and techniques of strategic choice and strategic implementation over different industries, measurement of performance in various business and effect of strategies and difference between traditional and contemporary business management

## **Course Contents:**

### **Module I: Introduction**

Concept of Planning, Evolution of Strategic Management, Corporate Strategy, Patterns of Strategy Development, Levels of Strategy, Competitive scope and value chain

### **Module II: Strategic Analysis**

Mission, Vision and Business Definition, Environmental Threat and Opportunity Profile (ETOP), Industry Analysis, Strategic Advantage Profile (SAP), Competitor analysis, market analysis, environmental analysis and dealing with uncertainty, scenario analysis and SWOT Analysis.

### **Module III: Strategic Choice**

Traditional Approach - Strategic Alternatives, Various models like BCG, GE Nine Cell Matrix, Hofer's Model, Strickland's Grand Strategy Selection Matrix, Basis of Choice; Michael Porter's Approach - Generic competitive strategies, Cost advantage, differentiation, technology and competitive advantage, substitution, competitor, complementary products and competitive advantage, strategic vision vs. strategic opportunism, Coevolving and patching.

### **Module IV: Offensive and Defensive Competitive Strategies**

Industry scenarios, advantages and disadvantages of defensive strategies, advantages and disadvantages of offensive strategies.

### **Module V: Strategic Implementation**

Operationalizing Strategy, Institutionalizing Strategy, Strategic Control, Balanced Scorecard – Concepts and applications in strategy implementation.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Azhar Kazmi, Business Policy and Strategic Management, 2<sup>nd</sup> Edition, Tata McGraw Hill.
- Kaplan Robert & Norton David P., 2001, Strategic Focused Organization, 1<sup>st</sup> Ed., Harvard Business School Press.

### **References:**

- Pearce John A & Robinson R B, 1977, Strategic Management: Strategy Formulation and Implementation, 3<sup>rd</sup> Ed., A.I.T.B.S. Publishers & Distributors.
- Aaker David, Strategic Market Management, 8<sup>th</sup> Ed., John Wiley and Sons
- Regular reading of all latest Business Journals: HBR, Strategist, Business World, Business India, Business Today.
- Porter Michael, Competitive Advantage: Creating and sustaining superior performance, Free press.
- Thomson & Strickland, Business Policy and Strategic Management, 14<sup>th</sup> Ed., Tata Mc Graw Hill

# BUSINESS COMMUNICATION - III

**Course Code: MBT 342**

**Credit Units: 01**

## **Course Objective:**

'Actions speak louder than words.' Every business communicator needs to understand the nuances of 'body language and voice.' This course is designed to enable the young Amitian to decipher the relevance of Kinesics, Proxemics and Para Language that cater to the fundamental requirements of effective business presentations and speeches.

## **Course Contents:**

### **Module I: Non- Verbal Communication**

Principles of non- verbal communication  
Kinesics  
Proxemics  
Paralanguage and visible code

### **Module II: Speaking Skills**

Pronunciation drills (Neutralizing regional pulls)  
Conversational English  
Guidelines to an effective presentation

### **Module III: Interviews and GDs**

## **Examination Scheme:**

<b>Components</b>	<b>CT1</b>	<b>CT2</b>	<b>CAF</b>	<b>V</b>	<b>GD</b>	<b>GP</b>	<b>A</b>
<b>Weightage (%)</b>	20	20	25	10	10	10	5

CAF – Communication Assessment File

GD – Group Discussion

GP – Group Presentation

## **Text & References:**

- Business Communication, Raman – Prakash, Oxford
- Business Communication for Managers: An Advanced Approach, Penrose, Thomson
- Business Communication, Krizan, Thomson
- Understanding Human Communication, 9/e, Adler R Oxford

# BEHAVIOURAL SCIENCE - III (LEADING THROUGH TEAMS)

**Course Code:** MBT 343

**Credit Units: 01**

## **Course Objective:**

This course aims to enable students to:  
Understand the concept and building of teams  
Manage conflict and stress within team  
Facilitate better team management and organizational effectiveness through universal human values.

## **Course Contents:**

### **Module I: Teams: An Overview**

Team Design Features: team vs. group  
Effective Team Mission and Vision  
Life Cycle of a Project Team  
Rationale of a Team, Goal Analysis and Team Roles

### **Module II: Team & Sociometry**

Patterns of Interaction in a Team  
Sociometry: Method of studying attractions and repulsions in groups  
Construction of sociogram for studying interpersonal relations in a Team

### **Module III: Team Building**

Types and Development of Team Building  
Stages of team growth  
Team performance curve  
Profiling your Team: Internal & External Dynamics  
Team Strategies for organizational vision  
Team communication

### **Module IV: Team Leadership & Conflict Management**

Leadership styles in organizations  
Self Authorized team leadership  
Causes of team conflict  
Conflict management strategies  
Stress and Coping in teams

### **Module V: Global Teams and Universal Values**

Management by values  
Pragmatic spirituality in life and organization  
Building global teams through universal human values  
Learning based on project work on Scriptures like Ramayana, Mahabharata, Gita etc.

### **Module VI: End-of-Semester Appraisal**

Viva based on personal journal  
Assessment of Behavioural change as a result of training  
Exit Level Rating by Self and Observer

## **Text & References:**

- Organizational Behaviour, Davis, K.
- Hoover, Judith D. Effective Small Group and Team Communication, 2002, Harcourt College Publishers
- LaFasto and Larson: When Teams Work Best, 2001, Response Books (Sage), New Delhi
- Dick, Mc Cann & Margerison, Charles: Team Management, 1992 Edition, viva books
- J William Pfeiffer (ed.) Theories and Models in Applied Behavioural Science, Vol 2, Group (1996); Pfeiffer & Company
- Smither Robert D.; The Psychology of Work and Human Performance, 1994, Harper Collins College Publishers

# FRENCH - III

**Course Code: MBT 344**

**Credit Units: 02**

## Course Objective:

To furnish linguistic tools

- to talk about work and problems related to work
- to perform simple communicative tasks (explaining a set back, asking for a postponement of appointment, give instructions, place orders, reserve)
- to master the current social communication skills
- oral (dialogue, telephone conversation)
- Written (e-mails, reply to messages)

## Course Contents:

**Unité 5, 6: pp. 74 to 104**

### Contenu lexical: Unité 5: Travail

1. manger au restaurant, comprendre un menu, commander
2. engager une conversation téléphonique
3. parler de sa formation, de son expérience, de ses compétences
4. Raconter des événements passés
5. consulter sa boîte e-mails, répondre aux messages

### Unité 6: Problèmes

1. identifier un problème, demander des précisions
2. expliquer un contretemps, déplacer un rendez-vous
3. demander de l'aide (par téléphone, par e-mail)
4. donner des instructions
5. expliquer un problème, suggérer une solution

### Contenu grammatical:

1. futur proche, articles partitifs, un peu de, beaucoup de, une bouteille de, un morceau de...
2. pronoms COD, venir de + infinitif, verbes appeler (au présent)
3. passé composé avec avoir, affirmatif et interrogatif, savoir et connaître
4. passé composé avec être, accord du participe passé, négation
5. pronoms COI, être en train de
6. ne...rien, ne...personne, ne...plus, ne...pas encore, qu'est-ce que/ qu'est-ce qui/qui est-ce que/qui est-ce qui
7. passé composé des verbes pronominaux
8. si/quand+présent, ne...plus, ne...pas encore
9. impératif présent (2) place du pronom et verbes pronominaux
10. trop/pas assez, verbe devoir au conditionnel présent

## Examination Scheme:

Components	CT1	CT2	C	I	V	A
Weightage (%)	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

## Text & References:

- le livre à suivre : Français.Com (Débutant)

# GERMAN - III

**Course Code: MBT 345**

**Credit Units: 02**

## **Course Objective:**

To enable the students to converse, read and write in the language with the help of the basic rules of grammar, which will later help them to strengthen their language.

To give the students an insight into the culture, geography, political situation and economic opportunities available in Germany

## **Course Contents:**

### **Module I: Modal verbs**

Modal verbs with conjugations and usage

Imparting the finer nuances of the language

### **Module II: Information about Germany (ongoing)**

Information about Germany in the form of presentations or “Referat”– neighbors, states and capitals, important cities and towns and characteristic features of the same, and also a few other topics related to Germany.

### **Module III: Dative case**

Dative case, comparison with accusative case

Dative case with the relevant articles

Introduction to 3 different kinds of sentences – nominative, accusative and dative

### **Module IV: Dative personal pronouns**

Nominative, accusative and dative pronouns in comparison

### **Module V: Dative prepositions**

Dative preposition with their usage both theoretical and figurative use

### **Module VI: Dialogues**

In the Restaurant,

At the Tourist Information Office,

A telephone conversation

### **Module VII: Directions**

Names of the directions

Asking and telling the directions with the help of a roadmap

### **Module VIII: Conjunctions**

To assimilate the knowledge of the conjunctions learnt indirectly so far

## **Examination Scheme:**

<b>Components</b>	<b>CT1</b>	<b>CT2</b>	<b>C</b>	<b>I</b>	<b>V</b>	<b>A</b>
<b>Weightage (%)</b>	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

## **Text & References:**

- Wolfgang Hieber, Lernziel Deutsch
- Hans-Heinrich Wangler, Sprachkurs Deutsch
- Schulz Griesbach, Deutsche Sprachlehre für Ausländer
- P.L Aneja, Deutsch Interessant- 1, 2 & 3
- Rosa-Maria Dallapiazza et al, Tangram Aktuell A1/1,2
- Braun, Nieder, Schmöe, Deutsch als Fremdsprache 1A, Grundkurs

## SPANISH – III

**Course Code: MBT 346**

**Credit Units: 02**

### **Course Objective:**

To enable students acquire knowledge of the Set/definite expressions (idiomatic expressions) in Spanish language and to handle some Spanish situations with ease.

### **Course Contents:**

#### **Module I**

Revision of earlier semester modules

Set expressions (idiomatic expressions) with the verb *Tener, Poner, Ir...*

Weather

#### **Module II**

Introduction to *Gustar...* and all its forms. Revision of *Gustar* and usage of it

#### **Module III**

Translation of Spanish-English; English-Spanish. Practice sentences.

How to ask for directions (using *estar*)

Introduction to IR + A + INFINITIVE FORM OF A VERB

#### **Module IV**

Simple conversation with help of texts and vocabulary

En el restaurante

En el instituto

En el aeropuerto

#### **Module V**

Reflexives

### **Examination Scheme:**

Components	CT1	CT2	C	I	V	A
Weightage (%)	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

### **Text & References:**

- Español, En Directo I A
- Español Sin Fronteras -Nivel Elemental

# JAPANESE - III

**Course Code: MBT 347**

**Credit Units: 02**

## **Course Objective:**

To enable the students to converse in the language with the help of basic verbs and to express themselves effectively and narrate their everyday short encounters. Students are also given projects on Japan and Japanese culture to widen their horizon further.

**Note:** The Japanese script is introduced in this semester.

## **Course Contents:**

### **Module I: Verbs**

Different forms of verbs: present continuous verbs etc

### **Module II**

More Adverbs and adverbial expressions

### **Module III: Counters**

Learning to count different shaped objects,

### **Module IV: Tenses**

Past tense, Past continuous tense.

### **Module V: Comparison**

Comparative and Superlative degree

### **Module VI: Wishes and desires**

Expressing desire to buy, hold, possess. Usage in negative sentences as well.

Comparative degree, Superlative degree.

### **Module VII: Appointment**

Over phone, formal and informal etc.

## **Learning Outcome**

- Students can speak the language and can describe themselves and situations effectively
- They also gain great knowledge in terms of Japanese lifestyle and culture, which help them at the time of placements.

## **Methods of Private study /Self help**

- Handouts, audio-aids, and self-do assignments.
- Use of library, visiting and watching movies in Japan and culture center every Friday at 6pm.

## **Examination Scheme:**

Components	CT1	CT2	C	I	V	A
Weightage (%)	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

## **Text & References:**

### **Text:**

- Teach yourself Japanese

### **References:**

- Shin Nihongo no kiso 1

# CHINESE – III

**Course Code: MBT 348**

**Credit Units: 02**

## **Course Objective:**

Foreign words are usually imported by translating the concept into Chinese, the emphasis is on the meaning rather than the sound. But the system runs into a problem because the underlying name of personal name is often obscure so they are almost always transcribed according to their pronunciation alone. The course aims at familiarizing the student with the basic aspects of speaking ability of Mandarin, the language of Mainland China. The course aims at training students in practical skills and nurturing them to interact with a Chinese person.

## **Course Contents:**

### **Module I**

Drills  
Dialogue practice  
Observe picture and answer the question.  
Introduction of written characters.  
Practice reading aloud  
Practice using the language both by speaking and by taking notes.  
Character writing and stroke order

### **Module II**

Measure words  
Position words e.g. inside, outside, middle, in front, behind, top, bottom, side, left, right, straight.  
Directional words – beibian, xibian, nanbian, dongbian, zhongjian.  
Our school and its different building locations.  
What game do you like?  
Difference between “hii” and “neng”, “keyi”.

### **Module III**

Changing affirmative sentences to negative ones and vice versa  
Human body parts.  
Not feeling well words e.g. ; fever, cold, stomach ache, head ache.  
Use of the modal particle “le”  
Making a telephone call  
Use of “jiu” and “cai” (Grammar portion)  
Automobiles e.g. Bus, train, boat, car, bike etc.  
Traveling, by train, by airplane, by bus, on the bike, by boat.. etc.

### **Module IV**

The ordinal number “di”  
“Mei” the demonstrative pronoun e.g. mei tian, mei nian etc.  
use of to enter to exit  
Structural particle “de” (Compliment of degree).  
Going to the Park.  
Description about class schedule during a week in school.  
Grammar use of “li” and “cong”.  
Comprehension reading followed by questions.

### **Module V**

Persuasion-Please don't smoke.  
Please speak slowly  
Praise – This pictorial is very beautiful  
Opposites e.g. Clean-Dirty, Little-More, Old-New, Young-Old, Easy-Difficult, Boy-Girl, Black-White, Big-Small, Slow-Fast ... etc.  
Talking about studies and classmates  
Use of “it doesn't matter”  
Enquiring about a student, description about study method.  
Grammar: Negation of a sentence with a verbal predicate.



**Examination Scheme:**

<b>Components</b>	<b>CT1</b>	<b>CT2</b>	<b>C</b>	<b>I</b>	<b>V</b>	<b>A</b>
<b>Weightage (%)</b>	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

**Text & References:**

- “Elementary Chinese Reader Part I, Part-2” Lesson 21-30

# SUMMER INTERNSHIP

**Course Code: MBT 350**

**Credit Units: 09**

## GUIDELINES FOR SUMMER TRAINING

The main objective of summer training is to familiarize students to laboratory environment and make them learn to handle equipments and softwares, design experiments and analyze the results. The student will be supervised by one or more faculty members and he or she will be required to submit a synopsis. While writing a synopsis emphasis should be given to make it publishable. But whether or not the results of a research project are publishable, the project should be communicated in the form of a research report written by the student. Initial drafts should be critiqued by the faculty guide and corrected by the student at each stage.

The File is the principal means by which the work carried out will be assessed and therefore great care should be taken in its preparation.

### In general, the File should be comprehensive and include

- A short account of the activities that were undertaken as part of the project;
- A statement about the extent to which the project has achieved its stated goals.
- A statement about the outcomes of the evaluation and dissemination processes engaged in as part of the project;
- Any activities planned but not yet completed as part of the project, or as a future initiative directly resulting from the project;
- Any problems that have arisen that may be useful to document for future reference.

### Report Layout

The report should contain the following components:

- TITLE PAGE
- CERTIFICATE
- ACKNOWLEDGEMENT
- ABBREVIATIONS
- CONTENTS WITH PAGE NUMBERS
- CHAPTER –
  - a. INTRODUCTION
  - b. REVIEW OF LITERATURE
  - c. MATERIALS & METHODS
  - d. RESULTS & DISCUSSION
  - e. SUMMARY AND CONCLUSION
  - f. REFERENCES
  - g. APPENDIX (OPTIONAL)
- 1 inch Margin on left side & 1”each on other sides.
- Single side of the paper to be used.
- Times New Roman.

### Font Size

- 12 (Bold for headings)
- 12 (Normal for Matter)
- 14 (for Chapter Names)
- 1.5 line spacing
- Numbering on the right hand Top of the page
- Numbers on pages before chapters to be done in Roman at the bottom of the page

### References

This should include papers and books referred to in the body of the report. These should be ordered alphabetically on the author's surname. The titles of journals preferably should not be abbreviated; if they are, abbreviations must comply with an internationally recognised system.

### Examples

#### For research article

Voravuthikunchai SP, Lortheeranuwat A, Ninrprom T, Popaya W, Pongpaichit S, Supawita T. (2002) Antibacterial activity of Thai medicinal plants against enterohaemorrhagic *Escherichia coli* O157: H7. *Clin Microbiol Infect*, **8** (suppl 1): 116–117.

## For Book

Kowalski, M.(1976) Transduction of effectiveness in *Rhizobium Meliloti*. SYMBIOTIC NITROGEN FIXATION PLANTS (editor P.S. Nutman IBP), 7: 63-67

- Scientific names in Italics
- Cover Page containing - Title, Students Name, Supervisors Name, University, Name (along with logo), Course name & year of Submission in the prescribed format
- 2 copies to be submitted

## ASSESSMENT OF THE PROJECT FILE

Essentially, marking will be based on the following criteria: the quality of the report, the technical merit of the project and the project execution.. Evaluation will compose of two components - Project report assessment and Viva - voce. Project report assessment will be done by the two internal faculty members in respective fields. A committee of three faculty members will conduct Viva-voce.

Technical merit attempts to assess the quality and depth of the intellectual efforts put into the project will be assessed as per evaluation format.

### Examination Scheme:

#### Report by Student (Internship File)

- |  |     |
|--|-----|
| a. Organization & Presentation/Language and clarity /substance of Contents covered and Comprehensiveness | 20% |
| b. Research Report   | 30% |

<b>Industry Feedback</b> (continuous)	20%
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<b>Presentation &amp; Viva</b> (At the end)	30%
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<b>Total</b>	<b>100%</b>
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# RECOMBINANT DNA TECHNOLOGY

**Course Code: MBT 302**

**Credit Units: 03**

## Course Objective:

The course will be focused primarily on the molecular mechanisms that underlie the regulated expression of genes, including transcription and translation. Genetic engineering and other experimental approaches that are critical to molecular biology research will be reviewed. Course material will be presented in a number of formats, consisting primarily of assignments and presentations which will also be reinforced by discussions.

## Course Contents:

### Module I: Genetic Engineering - An Overview

Genetic engineering (GE), Genetically modified organism (GMO), classic achievements of GE in agriculture, animal husbandry, pharmaceutical industry. Global trend in adopting GMO, applications of GE, pros & cons of using GMO

### Module II: Tools for genetic engineering

Vectors, Promoters and Enzymes, Cloning and Expression vectors, Plasmid, Cosmid, Phagemid, BAC, YAC, Vectors for animal and plants, Constitutive and conditional promoters. Enzymes - DNA polymerase, DNase, RNase, Reverse transcriptase, Restriction endonuclease, exonuclease, kinase, phosphatase, ligase

### Module III: Target gene - Identification and Isolation

Identification and Isolation of target gene from genome  
Polymerase chain reaction, Construction and screening of genomic and cDNA library, Homology based methods

### Module IV: Vectors for gene delivery

Construction of recombinant DNA, Basic steps for construction of recombinant DNA

### Module V: Delivery into the target host

Generation of transgenic animal, plant, fungi etc., Screening for transgenics, Southern blot, Northern blot and Western blot

## Examination Scheme:

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## Text & References:

### Text:

- Gene Cloning and DNA Analysis- An introduction, T. A. Brown, Blackwell Publications
- Principles of Gene Manipulation: An Introduction to Genetic Engineering, R.W. Old and S. B Primrose, Blackwell Science Inc

### References:

- Molecular Biotechnology: Principles and Practices, Channarayappa, University Press
- Molecular Biology of Gene V, Watson, Baker, Bell, Giann, Levine and Losick, Pearson Education
- Molecular Biotechnology: Principles and Applications of Recombinant DNA, B.R. Grick and J.J. Pasternak, ASM Press
- DNA Science, Micklos, Gafreyer and Crotty, Coldspring Harbor Laboratory Press
- Recombinant DNA, J.D. Watson et al., W.H. Freeman and Company

# GENOMICS AND PROTEOMICS

**Course Code: MBT 303**

**Credit Units: 03**

## **Course Objective:**

Research on the molecular basis of the control of gene expression in eukaryotic system has developed a detailed understanding of techniques of gene diagnostics and DNA profile to acquire the fundamentals of genomics and Proteomics. Focus will be on the current techniques and tools used in proteomics and genomics.

## **Course Contents:**

### **Module I: Genome evolution & Structural genomics**

Origin of genomes, Sequencing, The human genome, Data Bases (NCBI and Plant Databases), Annotation

### **Module II: Comparative & Functional Genomics**

Phylogeny, COGS (Clusters of orthologous genes, NCBI web site), Overview of ESTs, SAGE, cDNA Micro arrays, Application of Micro arrays; Gene finding tools

### **Module III: Introduction to proteomics**

Techniques: 2-D Gel electrophoresis, MASS spectrometry, Protein Chips, Tools in Proteomics

### **Module IV: Protein Structure and Function**

Protein Structure, Structure function relationship, Structure prediction: methods and tools, making use of databases of sequence and structures.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Genome II, T.A. Brown
- Proteomics: Daniel C. Leiber

### **References:**

- Bioinformatics: From Genomes to Drugs, T. Lengauer, John Wiley and Sons Inc.
- Bioinformatics: A practical guide to the analysis of genes and proteins, A.D. Baxevanis and B.F.F. Ouellette, John Wiley and Sons Inc.
- DNA Micro arrays: A Practical Approach, M. Schlena, Oxford University Press.

# CLINICAL DATA MANAGEMENT

**Course Code: MBT 304**

**Credit Units: 03**

## **Course Objective:**

Students will gain a solid understanding of Good Clinical Practices (GCP) and will explore ways of implementing GCP, including risk assessment and trial monitoring.

## **Course Contents:**

### **Module I**

Introduction to Disease processes

### **Module II**

Fundamentals of Clinical trials; Objective, Designing and outcome from phase trials. Protocol development for clinical trials.

### **Module III**

Data monitoring, validation and presentation, Data warehousing, Data mining, Med DRA, Biosuite soft wares.

### **Module IV**

Clinical Research Governance and Ethics.

### **Module V**

Database management in clinical research, Clini-Oracle, SQL

### **Module VI**

Quality Assurance in clinical research and clinical audits

## **Examination Scheme:**

<b>Components</b>	<b>CT</b>	<b>Attendance</b>	<b>Assignment/ Project/Seminar/Quiz</b>	<b>EE</b>
<b>Weightage (%)</b>	15	5	10	70

## **Text & References:**

### **Text:**

- Clinical Data Management, Richard K Rondel

### **References:**

- Design and analysis of Clinical trials : Concept and Methodologies, Shein-Chung Chow, Jen-Pei Liu, Wiley Series.
- Practical Guide to Clinical Data Management, Susanne Prokscha.

# BIOSAFETY REGULATIONS

**Course Code: MBT 305**

**Credit Units: 03**

## **Course Objective:**

To aim of the course is to give an overview of the Bio-safety regulations and other regulatory regimes in context to biotechnology industry.

## **Course Contents:**

### **Module I: Biosafety concepts and issues**

Rational vs. subjective perceptions of risks and benefits, relationship between risk, hazard, exposure and safeguards, biotechnology and

Biosafety concerns at the level of individuals, institutions, society, region, country and the world.

### **Module II: Biosafety in the laboratory institution**

Laboratory associated infections and other hazards, assessment of biological hazards and levels of Biosafety, prudent Biosafety practices in the laboratory/ institution, Biosafety regulations in the handling of recombinant DNA processes and products in institutions and industries, Biosafety assessment procedures in India and abroad

### **Module III: Biotechnology and food safety**

The GM-food debate and Biosafety assessment procedures for biotech foods and related products, including transgenic food crops, case studies of relevance.

### **Module IV**

Ecological safety assessment of recombinant organisms and transgenic crops, case studies of relevance (e.g. Bt cotton)

### **Module V**

Biosafety assessment of biotech pharmaceutical products such as drugs/vaccines etc.

### **Module VI: International dimensions in Biosafety**

Catagena protocol on Biosafety, bioterrorism and convention on biological weapons

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Biotechnology and Safety Assessment by Thomas, J.A., Fuch, R.L. (2002) (3 rd Ed).Academic Press.

### **References:**

- Biological safety Principles and practices by Fleming, D.A., Hunt, D.L., (2000) (3<sup>rd</sup> Ed).ASM Press, Washington.
- Biotechnology - A comprehensive treatise (Vol. 12). Legal economic and ethical dimensions VCH.
- Encyclopedia of Bioethics

# PRODUCT AND BRAND MANAGEMENT

**Course Code: MBT 306**

**Credit Units: 03**

## **Course Objective:**

In congruence with the aim of marketing to convert a commodity into an identifiable product and to a subsequent brand, the following two processes will be adopted: Impart comprehensive understanding of the process of conceptualization and the development of a product including its positioning and pricing strategies, focus to understand the concept of branding, developing a brand personality, identity, image, revitalization options and the methods to evaluate the brand.

## **Course Contents:**

### **Module I: Product Management**

Introduction and Concepts, Classification, Product Mix and Line decisions. Methods of positioning, Managing premium products and brands.

### **Module II: New Product Planning**

Product Life Cycle, Product Development Process, New Product Launches, Pricing Decisions & Strategies.

### **Module III: Evolving a Brand**

Concept of branding, the challenges faced by brand managers, the value of a brand to customers and the organization, Selection Criteria for Name, Symbol and Slogan, Creation of brand personality and the approaches to develop brand personality scale, brand image sources, identity and positioning, identity dimensions, core identity and extended identity of brands.

### **Module IV: Brand Re-vitalization**

Brand & Line Extensions, Marketing Mix for Brand Extensions, Co – Branding. Upward and Downward stretching of brands.

### **Module V: Managing the Brand Systems**

The complexities of managing brand systems, including brand roles, brand hierarchy & branding benefits. Brand Equity, Brand Awareness, Brand Loyalty, Brand Associations, Brand Promise, Brand Recognition, Recall and Brand Equity. Brand Examination based on cost based and customer based Examination methods.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Brand Positioning, Subroto Sengupta`

### **References:**

- Understanding Brands, Cowley. D
- Strategic Brand Management, Jean Noel Kampferer
- Building strong brands, David Aaker
- Brand Leadership, David Aaker



# RURAL AND AGRICULTURAL MARKETING

**Course Code: MBT 307**

**Credit Units: 03**

## **Course Objective:**

To understand how rural marketing is different from the urban marketing and to be aware of the success stories and failures in rural Indian Marketing.

## **Course Contents:**

### **Module I**

Rural Marketing: An Overview, principles of marketing as relevant to rural marketing, profiles of urban/rural customers, and differences in their characteristics, Features of rural market.

### **Module II**

Products and services in rural markets, Differentials at Core, tangible and augmented stages, Pricing strategies for rural markets, factors influencing rural pricing.

### **Module III**

Channel of rural distribution and trade management, Rural logistics and transportation, Journey cycles, organized retailing in rural India, Rural communication & Advertising, role of ICT, sales promotion strategies for rural markets,

### **Module IV**

Rural Sales-force management, Rural Marketing research, Agri-inputs Marketing: An overview of Fertilizers, Seeds, Agro-chemicals and Farm equipment markets,

### **Module V**

Role of agricultural finance & credit: role of commercial & cooperative banks, NABARD.

### **Module VI**

Role of cooperatives in rural economy: APEDA, NAFED, MARKFED, HPMC, a glimpse of the future of rural marketing.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Kashyap, Pradeep, & Raut, Siddhartha, The Rural Marketing Book – Text & Practice, Biztantra Publication, 2004.

### **References:**

- CGS Krishnamacharyulu, Rural Marketing-Text and Cases, Pearson Education.
- Y Ramkishen, New perspectives in rural and agricultural marketing, JAICO Publishing.
- S L Gupta, Rural Marketing, Wisdom Publication.
- C.S.G Krishnamacharyulu & Ramakrishnan Lalitha, Rural Marketing: Text and Cases Pearson Education, 2002.
- Kohls & Uhl, Marketing of Agricultural Products (9<sup>th</sup> ed), Prentice Hall of India

# RECRUITMENT, SELECTION, TRAINING AND DEVELOPMENT

**Course Code: MBT 308**

**Credit Units: 03**

## **Course Objective:**

The course aims at clear understanding of the influence of challenging JOB of recruiting, the selecting and retaining the human capital from the perspective of organizational excellence.

## **Course Contents:**

### **Module I: Acquiring Human Resources**

Business Strategy and Human Resource Planning, Job Analysis and SHRM, “Acquiring Human Resources”, New Approaches to Recruitment Process, Outsourcing the Recruitment Function, Strategic Recruitment & Selection.

### **Module II: Employee Testing and Selection**

Basic Testing Concepts, Psychological Testing: Methods of Employee Selection and new approaches to executive selection, An Asset in Selection & the Critical Overview, The Psychometric Testing with special reference to: FIRO – B, BELBIN, MBTI, TAT, Interviewing Candidates.

### **Module III: Process of Training**

Training Strategy, Establishing objectives, preparing the parameters, designing the programs, methods, trainers and training styles

### **Module IV: Training Evaluation**

Training Evaluation – Need for evaluation, Concept of Return on Investment, Cost – Benefit Analysis, Developing Models of Training Evaluation for Technical and Behavioural Training, Training Systems and Development – Training Centre, Action Resource for better Training.

### **Module V: Changes in Training Needs for Modern Organizations**

Concept and Need for Learning Organizations, Training for Trainers, Trainer Certifications, Creativity, Managing Change, Leadership, Team Playing and Effective Group Dynamics, Managing differences at workplace, Effective Communication, Managing Cultural Diversity, Sensitivity Training, Total Quality Management, Computer Based Training.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Blum, M.L. & Naylor, J.C. 1984, Industrial Psychology, CBS publishers and distributors.
- Dessler, G. 1997, Human Resource Management, Prentice Hall of India.
- Srivastava, S. 1999, Recruitment, Selection & Retention, ABS Course pack.
- Wexley, K & Lathan Gary, 2002, Developing & Training HR in Organization. P.Hall.

### **References:**

- Aggrwala A. Tanuja 2007 – Strategic Human Resources
- Barat, N. 1998, Emerging issues in Management, Excel Books, India.
- Greenberg, J. & Baron, R.A. 1993, Behaviours in Organizations, Allyn and Bacon, Boston.
- Kanungo, R.N. & Mendonca M. 1994, Work Motivation models for developing countries, Sage Publications, India.
- Luthans, F. 1998, Organizational Behaviour, McGraw – Hill International.
- Ramnarayan, S. & Rao, R.M. 1996, Managerial Dilemmas: Cases in organizational behaviour, Tata McGraw-Hill, India.
- Potts, Michael 1998, A-Z of Training & Development, Kogan Page

# INTERNATIONAL BUSINESS MANAGEMENT

**Course Code: MBT 309**

**Credit Units: 03**

## **Course Objective:**

The purpose of studying this course is to develop a holistic understanding of International Business. To impart knowledge of WTO, documentation, financial decision making, working of MNCs.

## **Course Contents:**

### **Module I**

International Business Environment. Globalization. Benefits of free trade and the problems associated with trade liberalization under certain circumstances

### **Module II**

The World Trade Organization I – Structure and constituent agreements; The World Trade Organization II – Concerns and Controversies. Trims and Trips-Labor conditions and environmental issues. Trade in services and agri products. IMF and World Bank.

### **Module III**

Role of multinationals in the global economy, and the cultural, and legal environments facing multinational corporations. Emerging areas of trade. Regional Economic Cooperation- trade blocks.

### **Module IV**

The key aspects international financial environment that is likely to affect companies, working of foreign exchange markets, exchange rate forecasting and foreign exchange risk management- hedging and speculation, treasury function of banks.

### **Module V**

Export-import procedures, customs clearance, documentation. Role of intermediaries. Duties and responsibilities of Clearing and Forwarding Agents.

### **Module VI**

Export Marketing Management-Overseas market research, Export pricing and finance. Management of risk.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- International Business- Czinkota-6<sup>th</sup> Edition.
- WTO & International Trading, MB Rao.
- How to Export Nabhi Publications 1999.
- International Financial Management, Apte, P G 1995, Tata McGraw Hill.

### **References:**

- International Finance, Levi, M D 1996, McGraw Hill International.
- Best Practice in International Business, Czinkota.
- Export Management, P K Khurana.
- Handbook of Exim Procedures and Documentation- Govt of India Publication Division.
- International Business-Competing in the Global Market Place, Charlee W H Hall.
- Export Marketing, PK Khurana.

# PRINCIPLES OF OPERATIONS MANAGEMENT

**Course Code: MBT 310**

**Credit Units: 03**

## **Course Objective:**

The aim of this course is to develop the understanding of the strategic and operational issues in the operational environment of any organization and the various decisions involved in the operational activities and the methods by which best possible alternative decision can be taken.

## **Course Contents:**

### **Module I: Introduction**

Introduction of operational functions of management, transformation/ conversion processes, inputs transforming resources to services and manufacturing units, using operations as strategic support & competitive advantage.

### **Module II: Strategic Decisions**

Planning and Designing the products/services, Designing the facility location and layout, Selection and Management of Product Technology, Long-range Capacity Planning.

### **Module III: Operating Decisions**

Planning Production Schedules, Aggregate Planning and Master Production Scheduling, Inventory Planning, Materials and Capacity Requirement Planning, JIT Manufacturing, Planning and Scheduling Services Operations.

### **Module IV: Controlling and Improvement Decision**

Controlling the Operations for Productivity, Quality and Reliability, Quality Control, Total Quality Management, Maintenance Management, Improving the Operations Process.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text :**

- Adam E.E., Jr and Ebert R.J. 1997, Production and Operations Management: Concepts, Models and Behaviour, 5<sup>th</sup> Ed. Prentice Hall of India.
- Buffa E.S. and Sarin R.K. 1994, Modern Production Operations Management, 8<sup>th</sup> Ed. John Wiley & Sons.

### **References:**

- Brown S., Lamming R., Bessant J. and Jones P. 2000, Strategic Operations Management, 1<sup>st</sup> Ed. Butterworth Heinmann
- Krajewski L.J. & Ritzman L.P. 1996, Operations Management: Strategy and Analysis, 4<sup>th</sup> Ed. Addison-Wesley
- Slack, Chambers, Hardland, Harrison, Johnston 1995, Operations Management, Pitman Publishing
- Waters D. 1996, Operations Management: Producing goods and services, Addison-Wesley
- Dilworth J.B. 1992, Operations Management, McGraw-Hill International Editors
- Lee S.M. & Schniederzans M.J. 1997, Operations Management, 1<sup>st</sup> Ed. All India Publishers & Distributers
- Haksever, Render, Russell & Murdick 1990, Service Management and Operations, 2<sup>nd</sup> Ed. Prentice Hall International, Inc.

# TOTAL QUALITY MANAGEMENT

**Course Code: MBT 311**

**Credit Units: 03**

## **Course Objective:**

The course is multidisciplinary and deals with the philosophy of TQM. The objective is to introduce the TQM from a managerial and human resource perspective. The course objectives are: to help identify implementation issues of TQM and to study various methods and approach to quality

## **Course Contents:**

### **Module I: Introduction**

Basic concepts of TQM, History of Quality Revolution, Leadership policy, External leadership, Strategic Planning – Strategic development process, Company Strategy, Customer & market Integration, Customer Satisfaction Enhancement

### **Module II: Process Management**

Management of product process, service process & support process, Supplier & partnering process, Managing Change, Human Resource Development & Management, Work Systems, Training, education & development, Employee well-being & satisfaction

### **Module III: Measurement & Continuous Improvement**

Measurement of Quality, Performance Measures, Cost of Quality, Basic tools of continuous improvement, Statistical application, Advanced improvement tools, House of Quality/QFD, Six-Sigma – Concept & understanding, problem resolution, Six-sigma Organization

### **Module IV: Quality Systems & Benchmarking**

ISO 9000-2000, Malcolm Bridge Examination, Quality Audit, Re-engineering, Benchmarks & Landmarks, Best practices

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Principles and Management of Total Quality, Evans & Lindsay, Thompson
- Oakland, J. S. 1997, TQM: Text with Cases, Butterworth – Heinmann

### **References:**

- Wankulu C.A., 1994, TQM: A Road Map, Tata-McGraw Hill India
- Ahluwalia J.S. Lt. Gen. – Editor, 1997, Total Quality Management, Tata-McGraw Hill India
- Crosby P., 1990, Let us Talk Quality, Penguin Publications
- Davenport S., Kimberly & Others, 1996, Focused Quality, John Wiley Sons Inc.

# PROCESS AND PRODUCTIVITY ANALYSIS AND IMPROVEMENT

**Course Code: MBT 312**

**Credit Units: 03**

## **Course Objective:**

This course is designed to: familiarize students to carry out analysis of various operations management processes with a view to achieve improvement in productivity and performance within the overall corporate objectives. The student should become aware of the major process improvement techniques and their application, impart comprehensive understanding of the concept of productivity, its measurement and management, focus on integrated and balanced measures of organizational performance, familiarize with performance improvement techniques across the business operations

## **Course Contents:**

### **Module I: Operating Processes and Interface**

Processes and their functions, importance, objectives of analysis, methods, Interface with other disciplines  
Manufacturing cycle, stages and the criteria

### **Module II: Process Selection**

Product-process matrix; Flow process, Continuous process, Batch process. Job-shop, Project; Service Process structures. Cost, Delivery, Flexibility and Quality  
Measures of Process Capability

### **Module III: Productivity Models and Application**

Concept of Productivity, Productivity defined; Efficiency and Effectiveness  
Interface between Quality and Productivity; Productivity and Production; Productivity and Profitability  
Classic Models on Productivity Measurement  
Productivity of Service Sector

### **Module IV: Productivity Measurements & Improvements**

Changing paradigm of performance expectations; Productivity Analysis; Quick Productivity Appraisal (QPA) Approach; Gold's Approach. Improvement Approaches: Industrial Engineering; Behavioural; Capital resources

### **Module V: Business Excellence Systems & Contemporary Practices**

JIT; Kanban System; Lean Production, Agile Manufacturing  
Cellular Manufacturing, Flexible manufacturing systems; Group Technology;  
Business Process Reengineering,  
Balanced Score Card: Kaplan & Norton BSC, Carl Thors' Family of Measures;  
Malcom Baldrige System; EFQM System

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Productivity Management: A Systems Approach, Prem Vrat; G.D. Sardana and B.S. Sahay; Narosa Publishing House, New Delhi
- Competitive Manufacturing Management, John M Nicholas, Tata McGraw Hill

### **References:**

- Fundamentals of Operations Management, Aquilano, Chase, Davis, Irwin McGraw Hill
- International Operations Management, Gerhard J Plenert, Copenhagen Business School Press
- Restructuring the Manufacturing Process, Gideon Halevi, APICS Series on Resource Management
- Productivity Engineering and Management, David J. Sumanth; McGraw Hill Book Company, New York, Planning, Measurement and Examination Control and Improvement, D. Scott, Sink, John Wiley & Sons, New York.

# BUSINESS ETHICS IN BIOTECH INDUSTRY

**Course Code: MBT 401**

**Credit Units: 04**

## **Course Objective:**

The scientific advancements have always been taking place to solve the problems faced by mankind but these have very often been accompanied by social fallouts and conflicts with the nature. If the human thinking is not fast enough to counter these fallouts, they might lead to undesirable outcomes which could at times be catastrophic. For effectively befitting the society from the scientific advancements like in Biotechnology on one hand and countering the undesirable outcomes on the other, the professionals need to deal with the ethical dilemmas faced by them. This course aims at sensitizing the students about such ethical dilemmas and develops in them an understanding of how to effectively deal with them while making decisions.

## **Course Contents:**

### **Module I: Economic Growth and Social Issues**

Changing Environment in General and Economic Environment in Particular, Economic Growth and Change Areas, Emerging Opportunities in Various Sectors including Social Sector, Economic Growth and Scientific Advancements

### **Module II: Humanizing the Scientific Progress**

Evolution of Mankind, Scientific Advancements and its Impact on Society, Bearing of Human Thinking and Social Context on Scientific Revolutions

### **Module III: Biotech's Ambiguous Attraction and Social Fallouts**

Genetic Uncertainties, Certain Dickey Dilemmas, Implications of Biotechnology on Human Healthcare and Medicine

### **Module IV: Social Fallouts and Ethical Dilemmas**

Unethical Use of Scientific and Technological Advancements, Breakthrough Research and Absence of Legal Framework, Management of Emerging Industries and Ethical Dilemmas

### **Module V: Ethics and Management**

Relationship among Management of an Organization, its Stakeholders and the Society, Conflict of Interests, Governance and Ethics, Reasons for Unethical Decisions

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

- Velasquez, M. G. 2006, Business Ethics: Concepts and Cases, Prentice Hall of India, 6<sup>th</sup> Edition.
- Kuhn, Thomas. 1996, Structures of Scientific Revolutions, University of Chicago Press, 3<sup>rd</sup> Edition.
- Cleveland, Harlan. 2002, Nobody Incharge: Essays on the Future of Leadership, Jossey Bass.
- Drucker, Peter F. "Managing the Future: The 1990s and Beyond". Dutton 1992
- Cadbury, Sir Adrian, "Ethical Managers Make Their Own rules". Harvard Business Review, 65, September / October 1987.

# BUSINESS COMMUNICATION - IV

**Course Code: MBT 442**

**Credit Units: 01**

## **Course Objective:**

The influx of multinationals, FDIs and Retail Management makes global communication a harsh reality and offers cultural communication challenges. This course is designed to inculcate transcultural communication skills among the young Amitians.

## **Course Contents:**

### **Module I: Importance of Culture in Communication**

Principles of effective cross cultural communication  
Developing Communication Competence

### **Module II: Barriers to effective communication**

Sender, Receiver and Situation related barriers  
Measures to overcome the barriers  
Listening skills

### **Module III: Cross cultural communication**

Characteristics of culture  
Social differences  
Contextual differences  
Nonverbal differences  
Ethnocentrism

## **Examination Scheme:**

<b>Components</b>	<b>CT1</b>	<b>CT2</b>	<b>CAF</b>	<b>V</b>	<b>GD</b>	<b>GP</b>	<b>A</b>
<b>Weightage (%)</b>	20	20	25	10	10	10	5

CAF – Communication Assessment File

GD – Group Discussion

GP – Group Presentation

## **Text & References:**

- Business Communication, Raman – Prakash, Oxford
- Business Communication for Managers: An Advanced Approach, Penrose, Thomson
- Understanding Human Communication, 9/e, Adler R Oxford



# **BEHAVIOURAL SCIENCE - IV**

## **(PERSONAL AND PROFESSIONAL EXCELLENCE)**

**Course Code: MBT 443**

**Credit Units: 01**

### **Course Objective:**

This course aims at imparting an understanding of:  
Build and leverage your professional reputation  
Maintain focus in pressure situations  
Make a balanced choice between professional and personal commitments

### **Course Contents:**

#### **Module I: Individual, Society and Nation**

Individual Differences and Dimensions of Personality  
Socialization Process  
Relating to the Nation: Values, Culture, Religion  
Sense of pride and Patriotism  
Managing Diversity

#### **Module II: Components of Excellence**

Personal Excellence:  
Identifying long-term choices and goals  
Uncovering the talent, strength & style  
Analyzing choke points in your personal processes by analysis in area of placements, events, seminars, conference, extracurricular activities, projects etc.  
Developing professional power: Goal-setting, time management, handling criticism, interruptions and time wasters

#### **Module III: Career Planning**

Knowing one's Interest and Aptitude  
Identifying available Resources  
Setting goals to maintain focus:  
Developing Positive attributes in personality  
Self-reliance and Employability skills

#### **Module IV: Stress Management for Healthy Living**

Meaning and Nature of Stress  
Stages of stress  
Causes and Consequences of stress: Personal, Organizational and Environmental  
Personal Styles and strategies of coping

#### **Module V: Professional Success**

Building independence & interdependence  
Reducing resistance to change  
Continued reflection (Placements, events, seminars, conferences, projects extracurricular Activities etc.)

#### **Module VI: End-of-Semester Appraisal**

Viva based on personal journal  
Assessment of Behavioural change as a result of training  
Exit Level Rating by Self and Observer

### **Text & References:**

- J William Pfeiffer (ed.) Theories and Models in Applied Behavioural Science, Vol 2, Group (1996); Pfeiffer & Company
- Smither Robert D.; The Psychology of Work and Human Performance, 1994, Harper Collins College Publishers
- Raman, A.T. (2003) Knowledge Management: A Resource Book. Excel Books, Delhi.
- Kamalavijayan, D. (2005). Information and Knowledge Management. Macmillan India Ltd. Delhi

## FRENCH - IV

**Course Code: MBT 444**

**Credit Units: 02**

### Course Objective:

To strengthen the language of the students with both oral and written

To provide the students with the know-how

- to master the tenses – present, past and future
- to express emotion
- to accomplish simple tasks of day-to-day programmes
- to prepare résumé

### Course Contents:

#### Unité 7: pp. 106

Rédiger un résumé (Cf. Campus 2 – P.6, Français.Com, Intermédiaire- p.98)

Passer un entretien d'embauche. Français.Com, Intermédiaire – p.100

#### Contenu lexical: Unité 7: Tranches de vie

1. évoquer un souvenir
2. raconter une histoire
3. rapporter des événements marquants d'une vie professionnelle
4. expliquer une situation de stress, donner son avis
5. faire des projets

#### Contenu grammatical:

1. formation de l'imparfait, chaque/chacun
2. emploi du passé composé et de l'imparfait
3. relatifs qui, que, où, mise en relief, indicateurs de temps : depuis, il y a, pendant, pour, en
4. pronom en de quantité, propositions complétives : je pense que..., je crois que ...
5. futur simple, pronom y

### Examination Scheme:

Components	CT1	CT2	C	I	V	A
Weightage (%)	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

### Text & References:

- le livre à suivre : Français.Com (Débutant)

# GERMAN - IV

**Course Code: MBT 445**

**Credit Units: 02**

## **Course Objective:**

To enable the students to converse, read and write in the language with the help of the basic rules of grammar, which will later help them to strengthen their language.

To give the students an insight into the culture, geography, political situation and economic opportunities available in Germany.

Introduction to Advanced Grammar Language and Professional Jargon

## **Course Contents:**

### **Module I: Present perfect tense**

Present perfect tense, usage and applicability

Usage of this tense to indicate near past

Universal applicability of this tense in German

### **Module II: Letter writing**

To acquaint the students with the form of writing informal letters.

### **Module III: Interchanging prepositions**

Usage of prepositions with both accusative and dative cases

Usage of verbs fixed with prepositions

Emphasizing on the action and position factor

### **Module IV: Past tense**

Introduction to simple past tense

Learning the verb forms in past tense

Making a list of all verbs in the past tense and the participle forms

### **Module V: Reading a Fairy Tale**

Comprehension and narration

Rotkäppchen

Froschprinzessin

Die Fremdsprache

### **Module VI: Genitive case**

Genitive case – Explain the concept of possession in genitive

Mentioning the structure of weak nouns

### **Module VII: Genitive prepositions**

Discuss the genitive prepositions and their usage: (während, wegen, statt, trotz)

### **Module VIII: Picture Description**

Firstly recognize the persons or things in the picture and identify the situation depicted in the picture;

Secondly answer questions of general meaning in context to the picture and also talk about the personal experiences which come to your mind upon seeing the picture.

## **Examination Scheme:**

Components	CT1	CT2	C	I	V	A
Weightage (%)	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

## **Text & References:**

- Wolfgang Hieber, Lernziel Deutsch
- Hans-Heinrich Wangler, Sprachkurs Deutsch
- Schulz Griesbach, Deutsche Sprachlehre für Ausländer
- P.L Aneja, Deutsch Interessant- 1, 2 & 3
- Rosa-Maria Dallapiazza et al, Tangram Aktuell A1/1,2
- Braun, Nieder, Schmöe, Deutsch als Fremdsprache 1A, Grundkurs

## SPANISH - IV

**Course Code:** MBT 446

**Credit Units:** 02

### **Course Objective:**

To enable students acquire working knowledge of the language; to give them vocabulary, grammar, voice modulations/intonations to handle everyday Spanish situations with ease.

### **Course Contents:**

#### **Module I**

Revision of earlier semester modules  
Introduction to Present Continuous Tense (Gerunds)

#### **Module II**

Translation with Present Continuous Tense  
Introduction to Gustar, Parecer, Apetecer, doler

#### **Module III**

Imperatives (positive and negative commands of regular verbs)

#### **Module IV**

Commercial/business vocabulary

#### **Module V**

Simple conversation with help of texts and vocabulary  
En la recepcion del hotel  
En el restaurante  
En la agencia de viajes  
En la tienda/supermercado

### **Examination Scheme:**

<b>Components</b>	<b>CT1</b>	<b>CT2</b>	<b>C</b>	<b>I</b>	<b>V</b>	<b>A</b>
<b>Weightage (%)</b>	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

### **Text & References:**

- Español Sin Fronteras (Nivel – Elemental)

# JAPANESE - IV

**Course Code: MBT 447**

**Credit Units: 02**

## **Course Objective:**

To enable the students to comfortably interact using basic Japanese.

**Note:** Teaching is done in roman as well as Japanese script, students will be taught katankana (another form of script) in this semester i.e. to be able to write all the foreign words in Japanese.

## **Course Contents:**

### **Module I**

Comparison using adjectives, making requests

### **Module II**

Seeking permission

### **Module III**

Practice of conversations on:

Visiting people, Party, Meetings, after work, At a ticket vending machine etc

### **Module IV**

Essays, writing formal letters

## **Learning Outcome**

- Students can speak the language describing above-mentioned topics.

## **Methods of Private study /Self help**

- Handouts, audio-aids, and self-do assignments, role-plays.
- Students are also encouraged to attend Japanese film festival and other such fairs and workshops organized in the capital from time to time.

## **Examination Scheme:**

<b>Components</b>	<b>CT1</b>	<b>CT2</b>	<b>C</b>	<b>I</b>	<b>V</b>	<b>A</b>
<b>Weightage (%)</b>	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

## **Text & References:**

### **Text:**

- Teach yourself Japanese

### **References:**

- Shin Nihongo no kiso 1

# CHINESE – IV

**Course Code: MBT 448**

**Credit Units: 02**

## **Course Objective:**

How many characters are there? The early Qing dynasty dictionary included nearly 50,000 characters the vast majority of which were rare accumulated characters over the centuries. An educate person in China can probably recognize around 6000 characters. The course aims at familiarizing the student with the basic aspects of speaking ability of Mandarin, the language of Mainland China. The course aims at training students in practical skills and nurturing them to interact with a Chinese person.

## **Course Contents:**

### **Module I**

Dialogue Practice  
Observe picture and answer the question  
Pronunciation and intonation  
Character writing and stroke order.  
Electronic items

### **Module II**

Traveling – The Scenery is very beautiful  
Weather and climate  
Grammar question with – “bu shi .... Ma?”  
The construction “yao ... le” (Used to indicate that an action is going to take place)  
Time words “yiqian”, “yiwai” (Before and after).  
The adverb “geng”.

### **Module III**

Going to a friend house for a visit meeting his family and talking about their customs.  
Fallen sick and going to the Doctor, the doctor examines, takes temperature and writes prescription.  
Aspect particle “guo” shows that an action has happened some time in the past.  
Progressive aspect of an actin “zhengzai” Also the use if “zhe” with it.  
To welcome someone and to see off someone .... I cant go the airport to see you off... etc.

### **Module IV**

Shipment. Is this the place to checking luggage?  
Basic dialogue on – Where do u work?  
Basic dialogue on – This is my address  
Basic dialogue on – I understand Chinese  
Basic dialogue on – What job do u do?  
Basic dialogue on – What time is it now?

### **Module V**

Basic dialogue on – What day (date) is it today?  
Basic dialogue on – What is the weather like here.  
Basic dialogue on – Do u like Chinese food?  
Basic dialogue on – I am planning to go to China.

## **Examination Scheme:**

<b>Components</b>	<b>CT1</b>	<b>CT2</b>	<b>C</b>	<b>I</b>	<b>V</b>	<b>A</b>
<b>Weightage (%)</b>	20	20	20	20	15	5

C – Project + Presentation

I – Interaction/Conversation Practice

## **Text & References:**

- “Elementary Chinese Reader, Part-2” Lesson 31-38

# DISSERTATION

**Course Code: MBT 455**

**Credit Units: 09**

## **Course Contents:**

### **METHODOLOGY**

The students are required to undertake a 12-16 weeks project work. Students would be in direct touch with the faculties to discuss their concerned project.

At the end of the semester they have to submit the project report and give a presentation on the work done.

### **The Aims of the Dissertation**

The aim of the dissertation is to provide you with an opportunity to further your intellectual and personal development in your chosen field by undertaking a significant practical unit of activity, having an educational value at a level commensurate with the award of your degree

The dissertation can be defined as a scholarly inquiry into a problem or issues, involving a systematic approach to gathering and analysis of information / data, leading to production of a structured report.

### **The Dissertation Topic**

It is usual to give you some discretion in the choice of topic for the dissertation and the approach to be adopted. You will need to ensure that your dissertation is related to your field of specialisation.

Deciding this is often the most difficult part of the dissertation process, and perhaps, you have been thinking of a topic for some time.

It is important to distinguish here between 'dissertation topic' and 'dissertation title'. The topic is the specific area that you wish to investigate. The title may not be decided until the dissertation has been written so as to reflect its content properly.

Few restrictions are placed on the choice of the topic. Normally we would expect it to be:

- relevant to business, defined broadly;
- related to one or more of the subjects or areas of study within the core program and specialisation stream;
- clearly focused so as to facilitate an in-depth approach, subject to the availability of adequate sources of information and to your own knowledge;
- of value and interest to you and your personal and professional development.

### **Planning your dissertation**

This will entail following:

- Selecting a topic for investigation.
- Establishing the precise focus of your study by deciding on the aims and objectives of the dissertation, or formulating questions to be investigated. Consider very carefully what is worth investigating and its feasibility.
- Drawing up initial dissertation outlines considering the aims and objectives of the dissertation. Work out various stages of dissertation
- Devising a timetable to ensure that all stages of dissertation are completed in time. The timetable should include writing of the dissertation and regular meetings with your dissertation guide.

### **The dissertation plan or outline**

It is recommended that you should have a dissertation plan to guide you right from the outset. Essentially, the dissertation plan is an outline of what you intend to do, chapter wise and therefore should reflect the aims and objectives of your dissertation.

There are several reasons for having a dissertation plan

- It provides a focus to your thoughts.
- It provides your faculty-guide with an opportunity, at an early stage of your work, to make constructive comments and help guide the direction of your research.
- The writing of a plan is the first formal stage of the writing process, and therefore helps build up your confidence.
- In many ways, the plan encourages you to come to terms with the reading, thinking and writing in a systematic and integrated way, with plenty of time left for changes.
- Finally, the dissertation plan generally provides a revision point in the development of your dissertation report in order to allow appropriate changes in the scope and even direction of your work as it progresses.

## Keeping records

This includes the following:

- Making a note of everything you read; including those discarded.
- Ensuring that when recording sources, author's name and initials, date of publication, title, place of publication and publisher are included. (You may consider starting a card index or database from the outset). Making an accurate note of all quotations at the time you read them.
- Make clear what is a direct a direct quotation and what is your paraphrase.

## Dissertation format

All students must follow the following rules in submitting their dissertation.

- Front page should provide title, author, Name of degree/diploma and the date of submission.
- Second page should be the table of contents giving page references for each chapter and section.
- The next page should be the table of appendices, graphs and tables giving titles and page references.
- Next to follow should be a synopsis or abstract of the dissertation (approximately 500 words) titled: **Executive Summary**.
- Next is the 'acknowledgements'.
- Chapter I should be a general introduction, giving the background to the dissertation, the objectives of the dissertation, the rationale for the dissertation, the plan, methodological issues and problems. The limitations of the dissertation should also be hinted in this chapter.
- Other chapters will constitute the body of the dissertation. The number of chapters and their sequence will usually vary depending on, among others, on a critical review of the previous relevant work relating to your major findings, a discussion of their implications, and conclusions, possibly with a suggestion of the direction of future research on the area.
- After this concluding chapter, you should give a list of all the references you have used. These should be cross - references with your text. For articles from journals, the following details are required e.g.

Draper P and Pandyal K. 1991, The Investment Trust Discount Revisited, Journal of Business Finance and Accounting, Vol18, No6, Nov, pp 791-832.

For books, the following details are required:

Levi, M. 1996, International Financial Management, Prentice Hall, New York, 3rd Ed, 1996

- Finally, you should give any appendices. These should only include relevant statistical data or material that cannot be fitted into the above categories.

## Guidelines for the assessment of the dissertation

While evaluating the dissertation, faculty guide will consider the following aspects:

1. Has the student made a clear statement of the objective or objective(s).
2. If there is more than one objective, do these constitute parts of a whole?
3. Has the student developed an appropriate analytical framework for addressing the problem at hand.
4. Is this based on up-to-date developments in the topic area?
5. Has the student collected information / data suitable to the frameworks?
6. Are the techniques employed by the student to analyse the data / information appropriate and relevant?
7. Has the student succeeded in drawing conclusion form the analysis?
8. Do the conclusions relate well to the objectives of the project?
9. Has the student been regular in his work?
10. Layout of the written report.

## Examination Scheme:

The evaluation is on the basis of the project report and the presentation.

Project Report: 100 marks  
Presentation: 50 marks

**Total: 150 marks**



# DRUG DISCOVERY AND DEVELOPMENT

**Course Code: MBT 402**

**Credit Units: 03**

## **Course Objective:**

The aim of this course is to provide an overview of the drug and biologics development process from discovery through regulatory approval. Emphasis is given to the roles, functions and importance of the various disciplines involved in the R&D process, their interactions with each other, and the strategic management of these functions. The student will gain an understanding of R&D strategy and the relationship between R&D and sales, marketing and manufacturing.

## **Course Contents:**

### **Module I: Overview of Drug Discovery & Development Process**

Introduction, Pharmaceutical value chain, Phases of drug discovery & development, Economics of drug development, Organization and governance of R&D, roles of sales, marketing and manufacturing in the R&D process

### **Module II: Drug Discovery**

Research & development strategy, Drug discovery and technology-enabled approaches to drug design, Toxicological evaluation of new molecules, Challenges of dosage formulation and dosage form design, Measuring and managing R&D performance

### **Module III: Drug Development**

Clinical trials: Challenges, strategies and measures of success, Phases of clinical trials, approval process, validation, Pharmacovigilance and risk management, Outsourcing, partnerships and strategic alliances

### **Module IV: Regulatory Issues**

Regulatory agencies and their mandates, Legislative mandates, Regulatory aspects of the drug development process, Regulatory strategy, Ethics of medical research, International Conference on Harmonization (ICH), Validation, Other regulations affecting the pharmaceutical and biotechnology industry

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Essentials of Drug Designing by V. Kothekar
- Drug Design by Cohen

### **References:**

- Principles of Drug Action by W.B. Pratt and P. Taylor. Churchill Livingstone
- Principles of Medicinal Chemistry by W.O. Foye, T.L. Lemke, and D.A. Williams. Williams and Wilkins
- Design and Analysis of Clinical Trials : Concepts and Methodologies (Wiley Series in Probability and Statistics)by: Shein-Chung Chow, Jen-Pei Liu

# ENVIRONMENT MANAGEMENT

**Course Code: MBT 403**

**Credit Units: 03**

## **Course Objective:**

To introduce the students to the technologies of cleaner environment and provide them the insight for legislations related to build a pollution free environment along with the approach of sustainable development.

## **Course Contents:**

### **Module I: Principles and Concepts of Environment**

Environmental components, Natural resources, Current status of major resources, Ecosystem and its diversity, Biodiversity and its conservation strategies: global scenario

### **Module II: Environmental Pollution and Current Environmental Issues**

Environmental Pollution and its impacts, Global warming and greenhouse effect, Global Ozone Problem, Acid rain, Eutrophication, Land degradation, Biomagnification

### **Module III: Managing Environment through Biotechnology**

Biomass energy and biofuels, Biodegradation and bioremediation of pollutants, Treatment of municipal wastes, Biosensors and biomarkers, Biomineralization, Biofertilizers, Biopesticides and Vermi composting

### **Module IV: Environmental Quality Assessment**

Environmental Protection standards in India, Environmental impact assessment, Environment Audit, Related Case studies from Indian Market

### **Module V: Environment Protection Acts and Sustainable Development**

Environmental Legislation: Status in India, The Wildlife Act, 1972; The Water Act, 1974; The Air Act, 1981; The Environment Act, 1986; The National Environmental Tribunal Bill, 1992; The Biological Diversity Act, 2002, Environmental Planning for sustainable development

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Environmental Science, SC Santra
- Text Book of Environmental Biotechnology, Pradipta Kumar Mohapatra

### **References:**

- Ecology and Environment, PD Sharma
- Environmental Chemistry, AK De
- Environmental Biotechnology, BD Singh
- Biotechnology, Dubey
- Wastewater Engineering, Metcalf and Reddy
- Bioremediation Protocols, Sheham
- Environmental Microbiology, PD Sharma
- Microbiology, Tortora
- Microbiology, Dubey and Maheshwari
- Biotechnology of Biofertilizers, Kannaiyan
- Manual of Environmental Microbiology, Hurstetc

# FOOD BIOTECHNOLOGY

**Course Code: MBT 404**

**Credit Units: 03**

## **Course Objective:**

This course will provide a broad grounding in concepts, techniques and issues involved in food products and their processing.

## **Course Contents:**

### **Module I: Introduction**

Scope and importance of food industry; RDT and other technologies involved in development of food products; Concept of 'functional food'; Advances and trends, ethical issues, quality control, legislation, FDA & FPO (India), patenting processes and products, consumer acceptance scenario for GM food products and GM crops.

### **Module II: Techniques used in Food Industry**

Sterilization, isolation, screening and strain improvement, cell harvesting and disruption, recovery and purification, production of organic acids – citric acid, lactic acid and acetic acid; Gene cloning, production of recombinant proteins e.g.: chymosin

### **Module III: Dairy Biotechnology**

Starter cultures, prebiotics, probiotics – their use as flavor enhancers and disease/ infection combats, applications in production of cheese, butter, ice-cream, yoghurt; applications in biomedical research, e.g. recombinant LABs as vaccines; Modified milk proteins.

### **Module IV: Microbial, Plant and Animal Biotechnology**

Production of SCP (Single cell protein), production of baker's yeast, brewing industry, applications of transgenic plants in food production, transgenic fish, and transgenic poultry.

## **Examination Scheme:**

<b>Components</b>	<b>CT</b>	<b>Attendance</b>	<b>Assignment/ Project/Seminar/Quiz</b>	<b>EE</b>
<b>Weightage (%)</b>	15	5	10	70

## **Text & References:**

### **Text:**

- Food Biotechnology - 2. 1988. R.D. King and P.S.J. Cheetham (Eds.). Elsevier Applied Science, NY.

### **References:**

- Introduction to Food Biotechnology. Green, Perry Johnson. 2002. CRC Press, Boca Raton, Florida.
- Food Biotechnology-Techniques and Applications. Gauri S. Mittal. 1992. Technomic Publishing Co., Inc., Lancaster, PA.

# INTELLECTUAL PROPERTY RIGHTS

**Course Code: MBT 405**

**Credit Units: 03**

## **Course Objective:**

The aim of this course is to develop the understanding of relevance, business Impact and protection of Intellectual Property along with the types of Intellectual Property Rights: Patents, Trademarks, Copyrights, Industrial Designs, Geographical Indications and International Conventions

## **Course Contents:**

### **Module I: Basic Principles and Acquisition of Intellectual Property Rights**

Basic Principles of Patent Law, Patent Application procedure, Drafting of a Patent Specification, Understanding Copyright Law, Basic Principles of Trade Mark and Design Rights, International Background of Intellectual Property

### **Module II: Ownership and Enforcement of Intellectual Property Rights**

Patents-Objectives, Rights, Assignments, Defences in case of Infringement. Copyright-Objectives, Rights, Transfer of Copyright, work of employment Infringement, Defences for infringement. Trademarks-Objectives, Rights, Protection of goodwill, Infringement, Passing off, Defences. Designs-Objectives, Rights, Assignments, Infringements, Defences of Design Infringement, Enforcement of Intellectual Property Rights - Civil Remedies, Criminal Remedies, Border Security measures, Practical Aspects of Licensing - Benefits, Determinative factors, important clauses, licensing clauses.

### **Module III: Information Technology Related Intellectual Property Rights**

Computer Software and Intellectual Property-Objective, Copyright Protection, Reproducing, Defences, Patent Protection, Database and Data Protection-Objective, Need for Protection, UK Data Protection Act, 1998, US Safe Harbor Principle, Enforcement. Protection of Semi-conductor Chips-Objectives Justification of protection, Criteria, Subject-matter of Protection, WIPO Treaty, Trips, SCPA. Domain Name Protection-Objectives, domain name and Intellectual Property, Registration of domain names, disputes under Intellectual Property Rights, Jurisdictional Issues, International Perspective.

### **Module IV: Biotechnology and Intellectual Property Rights**

**Biotechnology and the Law-** Objective, Evolution, Basic Structure of Gene Techniques, Applications, Commercial Potential of Biotech Inventions, Rationale for Intellectual Property Protection. Patenting Biotechnology Inventions-Objective, Concept of Novelty, Concept of inventive step, Microorganisms, Moral Issues in Patenting Biotechnological inventions. Plant Varieties Protection-Objectives, Justification, International Position, Plant Varieties Protection in India Protection of Geographical Indications Objectives, Justification, International Position, Multilateral Treaties, National Level, Indian Position.

**Protection of Traditional Knowledge-** Objective, Concept of Traditional Knowledge, Holders, Issues concerning, Bio-Prospecting and Bio-Piracy, Alternative ways, Protectability, need for a Sui-Generis regime, Traditional Knowledge on the International Arena, at WTO, at National level, Traditional Knowledge Digital Library.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Intellectual Property Rights by Birgitte Anderson, Edward Elgar Publishing
- Intellectual Property Rights and the Life Science Industries by Graham Dutfield, Ashgate Publishing

### **References:**

- WIPO Intellectual Property Handbook
- Intellectual Property by William Rodolph Cornish, David Clewelyn
- Globalising Intellectual Property Rights by Duncan Matthews

# ADVERTISING AND SALES PROMOTION

**Course Code: MBT 406**

**Credit Units: 03**

## **Course Objective:**

To familiarize students with advertising concepts and strategies, the methods and tools used. Enabling them to develop advertising strategies and plans and to develop the judgment parameters required in product management, to evaluate advertising.

## **Course Contents:**

### **Module I**

The Ad Business, the Agency, Role of Research, Positioning, Campaign Development, Campaign Implementation.

### **Module II**

Creating the Ad, Presentation, Media, Media Planning, Production Print, Production – other Media.

### **Module III**

Event Marketing – Surrogate Advertising etc. Sales Promotion – New Direction in Marketing, New Product Launches, Concept Promotion Vs Existing Category Advertising.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Advertising Management, David Aaker, Myers and Batra

### **References:**

- Magazines, A&M, Brand Equity, Business World
- Advertising, Wright, Winter, Ziegler
- Advertising, David Ogilvy, Trout and Ries
- Advertising Theory & Practice, Sandage, Fryburger, Ratroll

# INDUSTRIAL MARKETING

**Course Code: MBT 407**

**Credit Units: 03**

## **Course Objective:**

To understand how marketing for industrial good is different from the traditional marketing and marketing in rural India. To be aware of the success stories and failures in rural Indian Marketing.

## **Course Contents:**

### **Module I**

Environment of industrial and consumer marketing, profile of an industrial buyer, industrial and consumer marketing, organizational buying behaviour process and organizational buying behaviour, commercial and institutional buying, Bidding, tendering, channel behaviour, industrial establishment. OEM and impact on pricing policies.

### **Module II**

The strategic perspective in industrial marketing, the GE matrix, Michael Porter's generic options theory, economies of scale Vs economies of scope and case discussion of Schulman plastics.

### **Module III**

Buyer seller interactions, sales culture overshadowing the marketing culture, interactive transactions, organizational buying environment, individual Vs group decision making and buying center influences. Assessing the market reach, fragmented markets and their implications and industrial pricing the services component.

### **Module IV**

Industrial marketing communications, advertising, publicity, sales promotion possibilities, the role of exhibitions and domestic and international contacts, the marketing intelligence, role of MIS and DSS functions and evaluating the marketing strategies and performances.

### **Module V**

Marketing strategies, policy, sales management practices training, motivation and Examination.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Industrial Marketing Management: A strategic view of business markets, Michael D Hutt and Thomas W Speh.

### **References:**

- Industrial Marketing, Richard M. Hill, Ralph S Alexander and James C Cross.
- Newspapers- Economic Times, Business Standard, Financial Express, Brand Equity.
- Magazines- Advertising and Marketing, Business World, Business India.

# VENTURE CAPITAL FINANCING

**Course Code: MBT 408**

**Credit Units: 03**

## **Course Objective:**

Capital plays a substantial role in the success or failure of a firm. From the point of view of the entrepreneur, the course considers how significant business opportunities are identified, planned, and built into companies; how resources are matched with opportunities; and how within the framework entrepreneurs seek capital and other assistance from all available sources. From the point of view of the investor, the course considers how potential entrepreneurial investments are evaluated, valued, structured, enhanced and deployment of funding strategies for achieving final objective of wealth creation.

## **Course Contents:**

### **Module I: Introduction**

The Role of risk capital in Entrepreneurial Economy, High Risk High Growth Ventures, Stages of financing, Risk Capital Financing- Venture Capital, Private Equity, VC Organization-Limited Partners, General Partners, Mechanism of Risk Capital Financing, Industry Preferences, Key terms used in the process.

### **Module II: Critical factors Influencing Risk Capital Financing**

Parameters VCs look for, Negotiations, Problem Identification, Good and bad deals, Economic essentials – pre-money valuation with the help of a Case Study.

### **Module III: Due Diligence**

Due diligence basics, Due diligence of management, due diligence of market, due diligence of manufacturing unit, due diligence of financial & legal aspects.

### **Module IV: Building Boards**

Clarify attitude about role of Boards, Case Study

### **Module V: Various Aspects of VC Financing**

Valuation – The venture Capital Method, Spreadsheet Model for the venture Capital, Investment Securities; Legal Aspects - Structuring elements, Structuring Issues, Structuring in late Stage deals; Term Sheets, Closing the deal

### **Module VI: Exit of Venture Capitalist**

Initial Public Offering (IPO), Acquisition, Merger, Management buy-back of stock.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

- HPS Pahwa ,Project Financing
- Scott .L. Hoffman, Law & Business of International Project Finance
- Projects-Planning, Analysis, Selection, Financing, Implementation and Review,Prasanna Chandra.

# BUSINESS PLAN DEVELOPMENT

**Course Code: MBT 409**

**Credit Units: 03**

## **Course Objective:**

The objective of this course is to give the students a broad understanding of the field of enterprise creation and to provide an introduction to the important tools and skills necessary for creation and growth of a new venture. The course is designed to simulate the real life activities an entrepreneur undertakes and the key issues faced by him while starting a new venture. During the course, teams of students will evolve a new venture idea and develop a business plan including determination of demand for products and services and all other practical areas like commercial and financial viability etc.

## **Course Contents:**

### **Module I: Introduction**

Business Plan Definition, Why Plan Your Business?, Types of Business Plan-Planning for startup or planning for Operational Purposes, Planning for Fund Raising – What the Investors look for, Fund Raising for managing the business, Advantages of Business Planning, Appraising Your Current Position.

### **Module II: Issues & Challenges in Venture Creation**

Identifying new Projects, Idea versus Opportunities, Managing Finances, Socio-political factors, Geographical factors.

### **Module III: Conceptualization of Business Ideas**

Sector Study-look for the emerging sectors in particular market, Market study-look for the similar type of successful companies in other markets, Consultation with mentors, Brainstorm with industry experts, Ideation-narrowing down to one business, Preparing Project Profile.

### **Module IV: Business Plan Architecture**

Executive Summary, Company Summary, Products and Services, Market Analysis Summary, Strategy and Implementation Summary, Management Summary, Financial Plan.

### **Module V: Business Plan Development**

Agencies involved in writing the business plan-Investment Bankers, financial advisory companies and Investment Bankers, Sector Analysis, Idea specific research – Primary & secondary data collection, Data Analysis, Developing the structure, Financial Planning, Financial Modeling.

### **Module VI: Business Plan Analysis**

We must get feedback to improve the plan before we present it to investors, Technical analysis, commercial & financial Analysis, Risk Analysis, Valuation.

### **Module VII: Business Plan Finalization**

Incorporation of feedbacks from various sources to existing business plan and finalize the draft.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
<b>Weightage (%)</b>	15	5	10	70

## **Text & References:**

- This subject is taught through real examples and reports
- Anatomy of a Business Plan, by Linda Pinson



# WORLD CLASS MANUFACTURING AND TECHNOLOGY

**Course Code: MBT 410**

**Credit Units: 03**

## **Course Objective:**

The objective is to familiarize the students with WCM practices and their importance to enhance competitiveness in international markets. The aim is to develop understanding about the practical aspects of selection of process technology, management of technological resources and to make the students familiar with the changes required in the operational technology with rapidly changing environment.

## **Course Contents:**

### **Module I: WCM Introduction and Models**

The evolution of WCM; First principles of WCM; Hall's framework of Value added Engineering; Schonbergers' framework of WCM; Gunn's model of WCM; Maskells' model of WCM

### **Module II: Practices and Systems for WCM**

Information Management Tools: Kanban; Bar Code; Materials Processing Tools: Flexible Manufacturing Systems; Lean Production, Poka Yoke; Rapid Prototyping; Customer Interface; Supplier Interface; Quality in WCM – Deming's Approach; Shingo's Approach; Knowledge Management

### **Module III: WCM in Practice**

Real corporate world examples & exposure of WCM practices

### **Module IV: Product & Technology Management**

Market research, brand strategy and market entry, new product development and market support, Managing product development teams, Management of research & development, Strategic alliances and intellectual property; Competition and Technology, Concurrent Engineering, Dimensions of technology; Technology Strategy, Back office v/s Front office technology, Technology for manufacturing units, types of technology; Degree of Automation, Process of adoption & integration of technology; degree of integration; Feedback systems, control systems, Reliability, Technology comparison, tools of technology control, Replacement of obsolete technology

## **Examination Scheme:**

<b>Components</b>	<b>CT</b>	<b>Attendance</b>	<b>Assignment/ Project/Seminar/Quiz</b>	<b>EE</b>
<b>Weightage (%)</b>	15	5	10	70

## **Text & References:**

- The Goal, Nuts, Toyota Production Systems

# OPERATIONS STRATEGY

**Course Code: MBT 411**

**Credit Units: 03**

## **Course Objective:**

The objective is to develop understanding about the practical aspects of operations strategy, selection of process and infrastructure development. The aim of this course is to make the students familiar with the changes required in the operational strategy with rapidly changing environment.

## **Course Contents:**

### **Module I: Introduction**

Introduction, Role and Objectives of Operations Strategy, Incorporating Operations Strategy in the Corporate Strategy, Dynamics of process-product life cycles, Defining a Operations Strategy in Overall Environment, Manufacturing Implications of Corporate Marketing Decisions.

### **Module II: Developing Operations Strategy**

Principles and Concepts of Developing a Operations Strategy, Process of Operations Strategy Formulation, Methodology of Developing Operations Strategy, Business Implication of Process Choice, Product Profiling, Manufacturing Audit Approach, Manufacturing Restructuring, Infrastructure Development.

### **Module III: Implementation of Operations Strategy**

Principles and Concepts of Focused Manufacturing, Involvement of Human Aspects, Effect of Technology Advancement and Technology Management, Integration of Operations Strategy Planning and Technology Planning, Pre-requisites of Organized and Focused Manufacturing Strategy & Unit.

### **Module IV: Redefining Operations Strategy**

Value of Response Time and Product Variety in Operations Strategy, Management of Quality, Planning and Controlling System, Accounting & Financial Perspectives and Manufacturing System, Improving Manufacturing Process by Redefining & Restructuring Process Positioning

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Hill T., Manufacturing Strategy: The Strategic Management of Manufacturing Function, 2<sup>nd</sup> Ed. McMillan

### **References:**

- Voss C.A. 1992, Manufacturing Strategy: Process and Contents, Chapman & Hall
- Samson D. 1991, Manufacturing and Operations Strategy, Prentice Hall
- Harrison M. 1993, Operations Management & Strategy, Pitman Publishing
- Slack, Chambers, Hardland, Harrison, Johnston 1995, Operations Management, Pitman Publishing
- Harvard Business Review Articles on Manufacturing Strategy, HBR

# INNOVATION AND TECHNOLOGY MANAGEMENT

**Course Code: MBT 412**

**Credit Units: 03**

## **Course Objective:**

Understanding of Innovation, its significance and applications for sustained growth. Learning around creating a culture of innovation, its management, challenges and opportunities, Understanding of the practical aspects of operational technologies, selection of processes, infrastructure development and management of technological resources. Also understand the changing environment and processes to ensure proper alignment

## **Course Contents:**

### **Module I: Innovation Management**

Introduction: Concept, significance and organizational context. Models of Innovation, Innovation as a management process. Managing Innovation, Theories, Dilemmas, and uncertainties. Organizational structure and environment

### **Module II: Innovation as a Strategy**

Product Strategy, market research, Brand strategy and market entry. New product development and market support. Managing product and development teams. Technology Management, Management of research and development, Role of technology transfer, strategic alliances and intellectual property.

### **Module III: Basic Precepts of Technology Management**

Competition and Technology, Concurrent Engineering, Dimensions of technology

### **Module IV: Technologies used in various business processes of an Organisation**

Procurement, Manufacturing, Logistics, CRM, and HR processes. Concept of Enterprise Resource Planning System and its Implementation challenges. The opportunities and business benefits of smart tags in the Pharmaceutical and Medical Equipment sector.

### **Module V: Role of Technology Management is B-Technology**

e-Business Enterprise, Information Security Challenges in E-enterprises. Business Intelligence, Data warehouse and Data mining concepts.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Holt, David H. Entrepreneurship by PHI
- Gupta S.L. and Taneja Satish , Galgotia Publication

### **References:**

- Journal for Entrepreneurial Development, Published by Entrepreneurial Development Institute of India
- Porter Michael, Techniques for analyzing the Industries and Competitors, Forseman Publication
- Bird Barabara, Entrepreneurial Behaviour, Harper Publication
- Henderson James, Obtaining Venture Financing, Lexington Publication

# SUPPLY CHAIN MANAGEMENT AND LOGISTICS

**Course Code: MBT 413**

**Credit Units: 03**

## **Course Objective:**

The aim of this course is to develop the understanding of the various components of the integrated supply chain. The learning is focused on developing the supply chain to suit domestic as well as global markets.

## **Course Contents:**

### **Module I: Introduction of Logistics & SCM**

Evolution of Logistics and Importance of Supply Chain Management in the overall organization functioning, Customer Focus in Supply Chain, Developing Supply Chain as a Competitive Focus by customer satisfaction and corporate profitability, Role, Objectives & Policies of Purchasing and Supply Chain.

### **Module II: Strategic Issues in Supply Chain Management**

Value chain and value delivery system, Facilities Decisions, Transportation Choices, Vendor Relationships, Distribution Channel Design, Strategic Alliances, Communication Flow of Supply Chain, Inter-functional coordination, Inter-corporate cooperation

### **Module III: Managing the Supply Chain**

Benchmarking, Reengineering, IT Enabled Supply Chain Management, Application of ERP, JIT and Quality Management, Vendor Management & Development, Value Engineering/Analysis, Optimization of Supply Chain, Organization Design, Retailing Management

### **Module IV: Global Perspective**

Motives and Development of Global Markets, Managing the International Supply Chain Operations, Supply Chain Reconsideration- to suit the Global Environment, Risk Involved in International Markets, Benchmarking Global Supply Chains.

## **Examination Scheme:**

Components	CT	Attendance	Assignment/ Project/Seminar/Quiz	EE
Weightage (%)	15	5	10	70

## **Text & References:**

### **Text:**

- Gattorna J.L. & Walters D.W. 1996, Managing The Supply: A Strategy Perspective, McMillan Business

### **References:**

- Bowersox D.J. & Closs D.J. 1996, Logistics Management, McGraw-Hill International Editors
- Sahay B.S. 1999, Supply Chain Management: For Global Competitiveness, 1<sup>st</sup> Ed. McMillan India Pvt. Ltd.
- Dobler D.W. & Burt D.N. 1996, Purchasing and Supply Management: Text and Cases, 6<sup>th</sup> Ed. Tata McGraw-Hill
- Mentzer John T., Supply Chain Management