

CHARUTAR VIDYA MANDAL UNIVERSITY
VALLABH VIDYANAGAR – 388 120, GUJARAT

FACULTY OF SCIENCE
POST-GRADUATE PROGRAMME FOR
M.Sc. (Plant & Machinery Valuation)
ACADEMIC REGULATIONS AND COURSES OF STUDY

R.PG.VAL.1 ADMISSION

- 1.01 A candidate for admission to the Post-Graduate degree programme for M.Sc.(Plant & Machinery Valuation) must have passed the Bachelor Degree Examination preferably in commerce, science, engineering, architecture, mathematics, statistics, economics, law, management and agricultural science of this University or an examination recognized as equivalent thereto.
[Such as Section A & B Examination conducted by the Institution of Engineers (India) and Section A & B of Association Membership Course conducted by The Institution of Mechanical Engineers (India)]
- 1.02 Student who has passed qualifying examination from any other University or examining body and is seeking admission to this programme must produce an eligibility certificate from this University.

R.PG.VAL.2 PROGRAMME OF STUDY

- 2.01 A student shall follow at a time any one of the prescribed programmes – viz. M.Sc.(Real Estate Valuation) and M.Sc. (Plant & Machinery Valuation).

R.PG.VAL.3 EXEMPTIONS

- 3.01 A candidate shall be eligible for exemption(s) for the courses studied at the Bachelor Degree Examination or at the Post Graduate Degree Examination. Exemption shall be subject to approval by the head of the department.

RPG.VAL.4 ATTENDANCE

- 4.01 Candidate will be required to attend at least 75% of the total theory lectures organized under each of the course by them during the semester.

RPG.VAL.5 EXAMINATION

- 5.01 The ratio between the external and internal assessment will be 70:30
- 5.02 (i) The head of the department in consultation with other teachers of the department will prepare in the beginning of the semester a detailed scheme of the periodic test(s), seminars, quizzes etc., and the program for the test examinations and the same will be announced to the candidates. (ii) The record of the test examinations as well as seminars and quizzes will be maintained by the department.

RPG.VAL.6 ELIGIBILITY TO APPEAR IN UNIVERSITY EXAMINATION

- 6.01 Candidate will be required to obtain at least 33% marks in the internal evaluation separately in each head of passing. A candidate who fails to obtain 33% marks in not more than two heads of passing may be allowed to appear at the university examination by the Head of the department concerned on the recommendation of the committee appointed to assess the candidate's overall performance. (Note: Head of passing will mean a course in theory or practical, or project work).

RPG.VAL.7 EXAMINERS

7.01 A teacher offering a particular course will be one of the examiners at the university examination and the other examiner may be either a teacher from same university or from outside the university.

RPG.VAL.8 FINAL RESULT

8.01 The final result for the award of the degree will be declared on the basis of the grand total of all the semester examinations prescribed for the degree examination.

RPG.VAL.9 REPEAT COURSES

9.01 No candidate will be allowed to reappear in course in which he / she has already passed.

RPG.VAL.10 STANDARD OF PASSING

10.01 The standard of passing of M.Sc. (Plant & Machinery Valuation) degree examination will be as under:

- i. To pass any semester examination for the M. Sc. degree a candidate must obtain at least 40% marks in the university examination and 40% marks in the aggregate of university and internal examination in each course of Theory, Practical and project work.
- ii. Those of the successful candidates who obtain 50% or more marks in the aggregate of all the semesters taken together will be placed in the Second class and those who obtain 60% or more marks in the aggregate will be placed in the first class.
The successful candidates who obtain 70% or more marks in the aggregate of all the semesters taken together will be declared to have passed the examination in the first class with distinction.

RPG.VAL.11 CONTINUATION OF TERM

- i A candidate who fails in more than two courses (any two out of total heads of passing in the particular semester) in a particular semester will not be admitted for further study at a subsequent semester and will be required to repeat the courses in which he/she has failed by joining the department as a regular student in the semester in which these courses are again offered.

A candidate failing in not more than two courses at any semester examination will be promoted to the subsequent semester according to the following scheme.

- ii A candidate failing in the first semester will be permitted to prosecute his / her study up to the third semester but will not be permitted to go to the fourth semester until he / she has cleared all the courses of the first semester even though he / she may have passed in the second and / or third semester.

A candidate failing in the second semester will be permitted to prosecute his /her studies up to the fourth semester.

RPG.VAL.12 REQUIREMENT FOR THE AWARD OF DEGREE

The total credit requirements for the M. Sc. Degree in Valuation of Plant and Machinery be completed in not more than 8 semesters from the date of admission of the student.

CVM University
TABLE - 1

PROGRAMME OF STUDIES LEADING TO THE
M. SC. (PLANT AND MACHINERY VALUATION)
W.E.F. AY 2020-21 (JULY 2020)

First Semester**(CBCS)**

| Sr. No. | Course no. | Course Title | Credits | Total Marks | External | Internal |
|-------------------------|------------|--|---------|-------------|----------|----------|
| Core Courses | | | | | | |
| 1. | 101380101 | PRINCIPLES OF ECONOMICS | 4 | 100 | 70 | 30 |
| 2. | 101380102 | BOOK KEEPING AND ACCOUNTANCY | 4 | 100 | 70 | 30 |
| 3. | 101380103 | ELEMENTARY SURVEYING AND ENGINEERING DRAWING | 4 | 100 | 70 | 30 |
| 4. | 101380104 | INTRODUCTION TO STATISTICS | 4 | 100 | 70 | 30 |
| 5. | 101380105 | PRINCIPLES OF VALUATION | 4 | 100 | 70 | 30 |
| 6. | 101380106 | COMPREHENSIVE VIVA-VOCE | 1 | 50 | 50 | -- |
| Elective Courses | | | | | | |
| 7. | 101380107 | ELE. OF LAWS AND JURISPRUDENCE | 4 | 100 | 70 | 30 |
| 8. | 101380108 | AIR POLLUTION AND CLIMATE CHANGE | 4 | 100 | 70 | 30 |

Second Semester

| | | | | | | |
|-------------------------|-----------|--|---|-----|----|----|
| Core Courses | | | | | | |
| 1. | 101380201 | TOWN AND REGIONAL PLANNING | 4 | 100 | 70 | 30 |
| 2. | 101380202 | PRIN. OF M/C TOOLS & FAC. EQUIP | 4 | 100 | 70 | 30 |
| 3. | 101380203 | LEGAL STUDY-I | 4 | 100 | 70 | 30 |
| 4. | 101380204 | VALUATION OF P&M – I | 4 | 100 | 70 | 30 |
| 5. | 101380205 | VALUATION OF P&M – II | 4 | 100 | 70 | 30 |
| 6. | 101380206 | COMPREHENSIVE VIVA-VOCE | 1 | 50 | 50 | -- |
| Elective Courses | | | | | | |
| 7. | 101380207 | INDUSTRIAL PROCESSES | 4 | 100 | 70 | 30 |
| 8. | 101380208 | WATER POLLUTION AND CONTROL TECHNOLOGY | 4 | 100 | 70 | 30 |

Third Semester

| | | | | | | |
|-------------------------|-----------|---------------------------------|---|-----|----|----|
| Core Courses | | | | | | |
| 1. | 101380301 | ENVIRONMENTAL IMPACT ASSESSMENT | 2 | 50 | 35 | 15 |
| 2. | 101380302 | FINANCE, BUSI. & MGNT. STUDIES | 2 | 50 | 35 | 15 |
| 3. | 101380303 | PRIN. OF INSURANCE & LOSS ASSE. | 4 | 100 | 70 | 30 |
| 4. | 101380304 | LEGAL STUDY – II | 4 | 100 | 70 | 30 |
| 5. | 101380305 | VALUATION OF P&M-III | 4 | 100 | 70 | 30 |
| 6. | 101380306 | VALUATION P&M-IV | 4 | 100 | 70 | 30 |
| 7. | 101380307 | COMPREHENSIVE VIVA-VOCE | 1 | 50 | 50 | -- |
| Elective Courses | | | | | | |
| 8. | 101380308 | REPORT WRITING | 4 | 100 | 70 | 30 |
| 9. | 101380309 | SUSTAINABLE DEVELOPMENT | 4 | 100 | 70 | 30 |

Fourth Semester

| | | | | | | |
|----|-----------|-------------------------|----|-----|-----|----|
| 1. | 101380401 | FIELD WORK AND SEMINAR | 8 | 200 | 200 | -- |
| 2. | 101380402 | PROJECT WORK | 16 | 400 | 400 | -- |
| 3. | 101380403 | COMPREHENSIVE VIVA-VOCE | 1 | 50 | 50 | -- |

Scope:

The scope of the course is very wide. The students passing with the M. Sc. degree in Valuation of Plant & Machinery are expected to have opportunity to work as Registered Valuers under the respective category - viz. Plant & Machinery.

Valuation of Plant & Machinery is required for following purposes:

- i. Bank loan / Mortgage / Security
- ii. Advice on fair purchase / sale price
- iii. Liquidation, Auction etc.
- iv. Land acquisition and fixation of compensation
- v. Leasing
- vi. Acquisition / Mergers / Amalgamation of companies
- vii. Insurance
- viii. Revaluation of companies assets / accounting and management purposes
- ix. Dissolution of firms / family partitions

The course is designed with a view to equip students to enable them to carry out valuation for these and any other purposes required.

Duration: Two years Master Degree Course with Four Semesters (CBCS).

Eligibility: As per R.PG.VAL.1.01

Number of Seats:

M.Sc. (Plant & Machinery Valuation) - 15 (Fifteen)

The syllabus of the M.Sc. (Plant & Machinery Valuation) programme is given at **Annexure-II**.

M. SC. (PLANT AND MACHINERY VALUATION)

First Semester

101380101: PRINCIPLES OF ECONOMICS
CREDITS : 4

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|------------------------|---|---------------|
| Micro-Economics | | |
| 1 | Consumption: Indifference curve - consumer's surplus – elasticity; Production : input - output analysis - short - run and long - run production function - isoquant curves - least cost combination - return to scale; Price Mechanism: - determinants of price mechanism - individual and market demand schedules - law of demand & its conditions - exceptions and limitations of law of demand; individual and market supply schedules - conditions and limitations - reservation price - equilibrium price - importance of time element. | 25 |
| 2 | Pricing of products under different market conditions: perfect, imperfect or monopoly; Factors of production and payments thereof: (a) Land and Rent - Ricardian theory of rent - scarcity and differential rent - modern theory of rent - concept of quasi rent (b) Labour and Wages - Backward sloping supply curve of labour - determinants of supply of labour - theories of wages with special reference to marginal productivity theory - modern theory - collective bargaining and exploitation of labour - wage differentials and non-competing groups (c) Capital and Interest - Types of capital - gross interest - net interest - the classical theory - the neo classical theory - the liquidity preference theory of rate of interest (d) Organisation and Profit - Functions of entrepreneur - meaning of profit - various concepts of profit theories of profit; Pricing of factors of production. | 25 |
| Macro-Economics | | |
| 3 | Functions & role of money : non-money economy; Inflation and Deflation: Types of inflation - causes - effects - inflationary gap - control of inflation - monetary, fiscal and direct measures - deflation - causes - effects - deflationary gap - measures to control deflation - deficit financing. Price level: relationship between quantity of money and general price level - Prof. Fisher's version of quantity theory of money - determinants of price-level - price index numbers - cost of living index number and weighted index numbers - uses and defects; National Income/National Wealth: Circular flow of income - concepts of GNP & NNP - per capita income and consumption - components of national income - income expenditure and output methods of computing national income. | 25 |
| 4 | Savings and Investment: Savings and types of savings - determinants of savings - investment - types of investment - determinants of investment - relationship between savings and investment; Components of Economy: Primary sector - secondary sector - tertiary sector. Informal sector in Urban economy - Parasitic Components in Urban economy; Parallel Economy: What is parallel economy? Causes and effects of parallel economy on use of land and its valuation - its impact on real estate market - construction industry and parallel economy. | 25 |

Suggested Books

- (i) Introduction to Economics by C.N. Vakil & H.N. Pathak
(Vora & Co. Publishers Pvt.Ltd.)
- (ii) Elementary Economics by K.P.M. Sundharam (S. Chand & Co. Delhi)
- (iii) Economics by T.K. Mitra
- (iv) Economics by Samuelson
- (v) Advanced Economic Theory by H.L. Ahuja
- (vi) Business Economics by Sunny Thomas & Wahida Thomas
- (vii) Micro Economivs by Wahida Thomas & Ashok Gaur

101380102: BOOK KEEPING AND ACCOUNTANCY CREDITS : 4

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|------|---|---------------|
| 1 | The meaning and objects of book keeping. Double Entry book keeping. Introduction to Books of Prime entry and subsidiary books. | 25 |
| 2 | Cash book, bank book, journal ledger, purchase and sale books, debit and credit notes register, writing of books, posting and closing of accounts | 25 |
| 3 | Trading account, profit and loss account, income and expenditure account, presentation of balance sheet | 25 |
| 4 | Factory overhead, administrative overhead, fixed expenses, variable expenses, break-even point Depreciation and methods of computing depreciation used in accounts | 25 |

Suggested Books

- (i) Book Keeping by Jai Narainsingh
- (ii) Book Keeping by Basu & Basu

101380103: ELEMENTARY SURVEYING AND ENGINEERING DRAWING CREDITS : 4

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|----------------------------|---|---------------|
| Surveying | | |
| 1 | Introduction: Surveying and leveling, plane and geodetic surveys; control points; different types of maps; conventional symbols; map reading; Classification of surveys and surveying methods: Surveying instruments, common parts bubble tube, telescope, verniers etc. Errors and error propagation. | 25 |
| 2 | Linear Measurement : Chains, bands, tapes; accuracies, errors in measurement, corrections; Directions and Bearings: True meridian, magnetic meridian, use of compass; local attraction errors; angular measurements; Theodolite traversing, Gale's traverse table, optical distance measurement and finding out vertical components from them. | 25 |
| 3 | Elevation Measurement: Principles of different methods; leveling instruments, contours and contour maps; areas and volumes; Horizontal and vertical control for mapping Basic idea of Preparation of Plans and Maps: Introduction to plane tabling; Introduction to remote sensing. | 25 |
| Engineering Drawing | | |

| | | |
|----------|---|-----------|
| 4 | Construction and use of plain and diagonal scales; Conventional arrangement of views; first and third angle projections; types of lines, lettering and dimensioning; Introduction to projection of simple solids with varying position of axes and ground lines; Conversion of pictorial views in orthographic views; sectional views. | 25 |
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Suggested Books

Surveying

- (i) Surveying by Shri R.C.Bhavsar & Shri R.M. Khetani
- (ii) Surveying Volume -1 by Punamia B.C.
Standard Book House
- (iii) Elementary Surveying by Kulkarni
- (iv) Elementary Surveying by Kanetkar
- (v) Elementary Surveying by Prof. B.N. Ghosh
- (vi) Surveying by Arora Vol.1

Engineering Drawing

- (i) Elementary Engineering Drawing by N.D. Bhatt
Charotar Publishing House
- (i) Engineering Graphics by K.L. Narayan and P. Kannaiah
Tata McGraw Hill

101380104 : INTRODUCTION TO STATISTICS CREDITS : 4

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|----------|---|------------------|
| 1 | Data classifications and processing, graphical representation of data | 25 |
| 2 | Frequency distributions, measures of central tendency; dispersion and skewness | 25 |
| 3 | Elementary theory of probability and probability distributions; Sampling and sampling distribution, estimation; simple test of significance. | 25 |
| 4 | Regression and correlation; multiple correlation coefficient; Index numbers. | 25 |

Suggested Books

- (i) Statistical Methods for C.A. Students by S.P. Gupta
- (ii) Mathematical Statistics by Ray U Sharma
- (iii) Fundamentals of Statistics by D.N. Elhance
- (iv) Mathematical Statistics by C.E. Weatherbush
- (v) Mathematical Statistics by Goyal & Sharma
- (vi) A course in Probability & Statistics by H.J. Malik & K. Mullen.
- (vii) Problem of Statistics for Engineers & Scientists by Re Wolpolz & Raymond H.Myers
- (viii) Problem of Statistics by Murrey R. Spiegel

**101380105: PRINCIPLES OF VALUATION
CREDITS : 4**

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|------|--|---------------|
| 1 | Cost, price and value; types of value; Various purposes of valuation, Four ingredients of value, Factors affecting value, value elements, highest and best use, value in use and value in exchange; Annuities, capitalisation, rate of capitalisation, sinking fund, redemption of capital; Construction and use of valuation tables. | 25 |
| 2 | INCOME APPROACH TO VALUE ➤ Rent: Origin, classical theories and evolution of the concept ➤ Types of rent – outgoings – income – yield – years' purchase ➤ Lease : lessor and lessee : covenants, terms and conditions ➤ Leasing; land and building; occupational lease ➤ Valuation : lessor's interest, lessee's interest including sub-lease ➤ Investment comparisons : Yield from real estate, plant and machinery and other forms of investment – sound investment | 25 |
| 3 | MARKET APPROACH TO VALUE ➤ Market – real estate market – market value; bell type curve ➤ Comparison of sale instances – factors, methods and weightages ➤ International Valuation Standards | 25 |
| 4 | COST APPROACH TO VALUE ➤ Cost : ingredients – costing methods ➤ Depreciation – various methods of depreciation and their uses in different fields. ➤ Age – effective age – economic life and remaining life ➤ Depreciated replacement cost | 25 |

Suggested Books

- (i) Parks' Valuation – 5th Edition (1998) by D.N. Banerjee – Eastern Law House, Calcutta
- (ii) Appraisal Principles and Procedures by Henry A. Babcock
American Society Appraisers, P.O. Box 17265, Washington D.C. 20041, U.S.A
- (iii) Basic Real Estate Appraisal by Richard M. Betts and Silas J. Ely
American Society Appraisers, P.O. Box 17265, Washington D.C. 20041, U.S.A
- (iv) Theory and Practice of Valuation by Roshan H. Namavati
Lakhani Book Depot, Near Girgaon Church, Bombay - 400 004
- (v) Modern Methods of Valuation, 8th Edition
by William Britton, Keith Davis and Tony Johnson
- (viii) Valuation Principles and Procedures by Ashok Nain, Kolkata
- (ix) Valuation of Plant & Machinery (Theory & Practice) by Kirit Budhbhatti.
- (x)

**101380106: COMPREHENSIVE VIVA-VOCE
CREDIT : 1**

**101380107: ELEMENTS OF LAWS AND JURISPRUDENCE
(ELE. OF LAWS AND JURISPRUDENCE)
CREDITS : 4**

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|------|---|---------------|
| 1 | <u>Elementary Jurisprudence:</u> Law- its origin, sources and ramifications; Legislative enactments - subordinate legislation - Judicial precedents. <u>Indian Legal System:</u> Salient features of the Indian Constitution, fundamental rights: directive principles of the state policy; Executive, Legislature and the judiciary; Centre - State relationship. | 25 |

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|----------|--|-----------|
| 2 | <u>Law of Contract:</u> Formation of a contract, parties; void, voidable and unenforceable contract; contingent contract; misrepresentation and fraud - effect thereof. | 25 |
| 3 | Termination of contract; remedies for breach; performance of contract; indemnity and guarantee; law of agency; general principles of tort; tort affecting valuation. | 25 |
| 4 | <u>Local Government</u> Types- Rural and Urban, constitutional provisions, powers and functions; Sources of revenue : Tax and Fee, Municipal Finance, essential civic services; <u>Conveyancing</u> Outline procedure for sale of immovable property : contract and conveyance; preliminary inquiries, open contract; contract by correspondence; Title: requisition and searches. | 25 |

Suggested Books

- (i) Jurisprudence by M.J. Sethna, Publishers : Lakhani Book Depot. Lamington Road, Bombay - 400 007
- (ii) Constitution of India by Basu.
- (iii) Law of Torts by B.S. Sinha, Eastern Book Company, 34 Lal Baugh, Lucknow
- (iv) Mulla on Indian Contract Act (Students Edition)
N.M. Tripathi, Princess Street, Bombay 400 002
- (v) Law of Torts by Desai
- (vi) Indian Judiciary by Dr. P. Dhar
- (vii) Local Self Government in India by M.P. Sharma
- (viii) Treatise on Calcutta Municipal Corporation Act by D.N. Banerjee & S. Sengupta
- (ix) West Bengal Municipal Act, by D.N. Banerjee
- (x) DeSouza's Conveyancing, by C.R.Datta and M.N. Das

101380108: AIR POLLUTION AND CLIMATE CHANGE CREDITS: 4

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|----------|---|---------------|
| 1 | Definition, history, sources of air pollution - natural and anthropogenic, primary and secondary, Aeroallergens - sources, biology and health effects, general effects of atmospheric pollutants (PM, HC, CH ₄ , CO ₂ , H ₂ S, CO, NO _x , SO _x) on humans, animals, plants and materials; Ambient air quality emission standards, automobile pollution (photochemical oxidants, photochemical smog), characteristics - auto exhaust, and its control (catalytic converters), air pollution episodes (Bhopal, Chernobyl, Los Angeles, London smog, Indonesian forest fire), recent case studies on air pollution | 25 |
| 2 | Environmental factors and air pollution - heat, insulation, wind, precipitation, plume behavior, sampling and measurement of air pollution - ambient air and stack monitoring, indoor air pollution, indoor air quality, prevention and control of air pollutants - particulate matter & gaseous pollutants – absorption, adsorption, settling chambers, fabric filters, scrubbers, cyclone & electrostatic precipitators, Clean Development Mechanisms (CDM): carbon sequestration, carbon footprint, carbon trading, carbon market | 25 |
| 3 | Climate Change: Definition of Climate and weather, Evolution of atmosphere, composition and structure, Particles, ions and radicals in atmosphere, Chemical reactions of different chemical species in the atmosphere, Oxygen and ozone chemistry and ozone hole formation. greenhouse gases- global warming, temperature inversion, global | 25 |

| | | |
|---|--|----|
| | effects of GHGs, Classification of Climates, causes and consequences of Climate changes, Impacts of climate change on ecosystems, Global dispersion of toxic substance: Dispersion and circulating mechanisms of pollutants, ozone depletion, dust dome effect, acid rain, photochemical smog, heat island, Kyoto Protocol, Role of IPCC, Climate change methodologies | |
| 4 | Disaster management- Concept of disasters, causes, prevention and correction hazards related to Earthquakes, Tsunami, Volcanic eruption, Cyclones, Floods, Drought, Landslides, Forest fires, Avalanches and Pest infestation, El nino and La Nina. | 25 |

Suggested Books

1. A.K.DE. 1987. Environmental Chemistry. Wiley Eastern Limited
2. Blaikie, P., Cannon, T., Davies, I. and Wisner, B. (1994) At Risk: Natural Hazards, People's Vulnerability, and Disasters. London: Routledge. Bohle, H., Downing, T. and
3. Burroughs, W.J. 2001. Climate Change. Cambridge University Press.
4. Hobbes, P.V. 2002. Atmospheric Chemistry. Cambridge University Press.
5. Houghton, J. 2001. Global Warming. Cambridge University Press.
6. Maslin, M. Global Warming: A Very Short Introduction. (Oxford: Oxford University Press, 2008) [ISBN 9780199548248].
7. Rao, M. 2002. Air Pollution. Prentice & Hall.
8. Sainfeld, J.H. 1975. Air Pollution. Physical and Chemical Fundamentals, McGraw Hill, N.Y.
9. Sharma, B.K. 2002. Air Pollution. Academic Press.
10. Wayne, R.P. 2003. Chemistry of Atmosphere. Oxford University Press.

Second Semester

101380201: TOWN AND REGIONAL PLANNING CREDITS : 4

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|------|--|---------------|
| 1 | Desirability of Planning - planning practices in India - planning process and hierarchy of planning (Macro level to Micro level); Physical, social and economic factors in relation to development; Land use planning and management, Concept of city and town as a human settlement | 25 |
| 2 | Preparation of development plan, Land use zoning principles and its effect on real estate; Development plan : agencies involved in plan preparation and implementation: Effect of Development Plan on Valuation, effects of 73 rd and 74 th constitutional amendments; Legal mechanism for enforcement of planning document - Updating of planning document- Effect of planning document in force. | 25 |
| 3 | Regional Planning : Its aim and objectives and basic concepts; Some theories on Regional Planning e.g. delineation of region, types of region; Hierarchy of Regions, Human Settlements. Industrial location theory (WEBER and ISART). | 25 |
| 4 | Laws Affecting Planning: Development plan, rules and regulations as prepared under the Gujarat Town Planning and Urban Development Act 1976 and the M.R.T.P. Act, 1966; The Development Control Regulations; Bombay Land Revenue Code and its important documents to be | 25 |

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| studied for Real Estate; Agencies involved for the preparation of Development Plan and Regional Plan under various Acts; Introduction to Bombay Provincial Municipal Corporation Act, 1949 and the Gujarat Municipal Act, 1961; Preparation of Draft T.P. Scheme and Final T.P. Scheme | |
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Suggested Books

- (i) Town Design by Fredrick Gibbered, London Architecture Press London.
(ii) Principles of Town & Country Planning by Lewis Keeble.
(iii) The Image of City by Kevin Lynch, M.I.T. Press, Cambridge, U.K.
(iv) Site Planning by Kevin Lynch, M.I.T. Press, Cambridge, U.K.
(v) Shopping towns
(vi) Urban Design as Public Policy by Jonathan Barnett
Architectural Record McGraw Hill Publication
(vii) Planning the Indian Cities by M.N. Buch
(viii) Social Aspects of Urban Planning) Dr.H.D.Kopardekar
) All India Institute of

(ix) Management Ideas of Urban Planning) Local Self Govt.
) Andheri (West)
(x) Land Pooling and Readjustments) Bombay - 400 058
(xi) Town Scape by Gordon.
(xii) Urban Pattern by Gallion.
(xiii) Architecture of Towns and Cities by Sprragrin.
(xiv) Model Town and Country Planning Act
Published by Town & Country Planning Organisation, Govt.of India
(xv) Principles of Town & Country Planning by Modok V.S.
(xvi) Town Planning by Institute of Estate Management
(xvii) Modern Town and Country Planning Act, Published by Town and Country Planning Organisation, Government of India

**101380202 : PRINCIPLES OF MACHINE TOOLS AND FACTORY EQUIPMENT
(PRIN. OF M/C TOOLS & FAC. EQUIP)
CREDITS : 4**

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|----------|--|---------------|
| 1 | The evolution, nature and function of machine tools and their control systems, together with standard items of normally associated machine equipment, cutting tools, inspection and measuring equipment; their recognition, differentiation and description; Cutting tools to include drills, reamers, taps and dies, milling cutters, shaped profile cutters, form cutters, hobs, broaches and single-point cutting tools. | 25 |
| 2 | Machine tools to include all types of automatic screw machines, boring, broaching and drilling machines, grinders, gear machinery, power presses, press brakes and guillotine shears, shapers, saws and cut-off machines, machining centres, transfer and indexing machine, jig borers, lathes, milling machines, electro-discharge machines, planners and plano-millers etc. | 25 |
| 3 | Machine equipment to include robotic systems, arbors, boring heads, chucks, collets, dividing heads, milling heads, rotary tables, machine vices, faceplates, attachment for taper turning, tapping, threading, profiling and slotting, coolant equipment, etc.; Inspection and measuring equipment to include projectors and enlargers, single and multi-axis measuring machines, verniers and | 25 |

| | | |
|----------|---|-----------|
| | micrometers, thread, ring and plug gauges, protractors, straight edges, squares, levels, sine bars and tables, slip gauges etc. | |
| 4 | The nature and function of the following items of machinery and factory equipment in general use throughout industry: Cranes and hoists, gravity and power conveyors, forklift trucks, racking and warehousing systems, air compressors, pumps, fans and electric motors, sheet metalworking plant, welding and cutting plant, woodworking machines, garage plant, firefighting equipment, communications and security equipment, office machinery, computers and private and commercial vehicles. | 25 |

Suggested Books

- (i) Production Management by Lockyer, Published by Pitman
- (ii) How Things work, the Universal Encyclopaedia of Machines by Paladin
- (iii) Parry's Chemical Engineers Handbook
- (iv) Manufacturing Technology by Hodder and Stoughton
- (v) How to buy Metal Working Machinery and Equipment by Lucky D.Slate
Industrial Machinery News Corporation, Michigan U.S.A
- (vi) Machinery buyer's guide
Published by All India Machine Tools Manufacturers Association
- (vii) Mechanical Engineer's Hand book
- (viii) Process engineering for Manufacture
Donald F.Eary and Gerald E.Johnson, Prentice Hall Publishers N.J. U.S.A
- (ix) All about Machine Tools, Published by Wiley Eastern Ltd.

In addition to the above recommended reading, students are advised to refer to books on individual industries and manufacturing processes, paying particular attention to process flow diagram.

As it is essential for the student to keep upto-date with advancing technology and machine developments, weekly, fortnightly or monthly publications of various bodies in fields like production/manufacturing machinery/engineering is recommended on a continuing bases.

101380203: LEGAL STUDY - I CREDITS : 4

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|----------|---|---------------|
| 1 | Authority of auctioneer, Duties of vendor, purchaser and public Misdescription and misrepresentation, advertisements, particulars and catalogues, statements on the rostrum, conduct of sale, reservation of price and right to bid, withdrawal of lots. Bidding agreements; Memorandum of the sale; The deposit, rights of auctioneer against vendor and purchaser, Sales under statute and by order of the court. | 25 |
| 2 | General principles of Insolvency law - the Insolvency and Bankruptcy Code of India, 2016; The role of insolvency practitioners - their powers and obligations - particularly as they affect the treatment and disposal of assets as prescribed by Insolvency and Bankruptcy Board of India (IBBI) | 25 |
| 3 | Debenture holders and creditors; fixed and floating charges; retention of title, third party assets; set off and liens; voidable transactions and preferences, continuing of trading, disposals and reorganization | 25 |
| 4 | The powers and duties of official liquidators and court receivers. The basis, method, scope and duration of their appointment. Receivership and liquidation procedures; Law of arbitration and conciliation : Salient features | 25 |

Suggested Books

- (i) Law Relating to Receivers by Woodroffe
- (ii) Law of Receivers by Pillai/Nair
- (iii) The Insolvency and Bankruptcy Code of India, 2016
- (iv) Companies Act (Bare Act) and Companies Rules
- (v) Arbitration and Conciliation Act, 1996

**101380204: VALUATION OF PLANT AND MACHINERY – I
(VALUATION OF P&M-I)
CREDITS : 4**

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|----------|---|---------------|
| 1 | Valuation of plant and machinery, bases of value and the purposes for which their use is most appropriate. Interpretation and use of the following terms: gross current replacement cost, net current replacement cost, open market 'in situ' and 'ex situ' and 'existing use' and 'alternative use', residual values, recoverable amount, highest and best use | 25 |
| 2 | Depreciation, various methods of computing depreciation, - its measurement and application in assessing value to the business. Depreciation under Income-tax Act as well as Companies Act Meaning of terms written down/book values; Valuation of Plant & Machinery for municipal rating purposes | 25 |
| 3 | Indexation; RBI indices - their uses and limitations; Plant records and asset registers - their compilation, uses and limitations; Preparation of inventories. | 25 |
| 4 | Plant and machinery normally valued with the premises; Principles of construction and functional design elements of industrial buildings. Constructional requirement under regulatory laws Industrial visits | 25 |

Suggested Books

- (i) Valuation of Plant and Machinery (Theory & Practice) by Kirit Budhbhatti
- (ii) Appraising of Machinery and Equipment, Edited by John Alico
Published by American Society of Appraisers
ISBN - 07-001475-2, Mc Graw Hill, New Delhi
- (iii) Guidance Notes published by Institution of Chartered Accountants of India on Valuation of Fixed Assets.
- (iv) Valuation of Plant and Machinery by C.J.C. Derry
Property Valuation Hand Book B5, Published by Centre for Advanced Land Use Studies, College of Estate Management
- (v) Inflation Accounting by W.T. Baxter
- (vi) Industrial Valuation by Karslake and Nichols, Published by Estate Gazettes U.K.

**101380205: VALUATION OF PLANT AND MACHINERY – II
(VALUATION OF P&M-II)
CREDITS : 4**

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|----------|--|---------------|
| | Study of basic engineering services: | |
| 1 | Energy generation - Boilers & their accessories Heat Exchangers Pumps, Fans, Blowers and Compressors. | 25 |

| | | |
|----------|---|-----------|
| 2 | Solar systems Process Heating Thermopacs Water softening plant / D.M. Plant Energy saving Diesel generation. | 25 |
| 3 | Energy utilization - Refrigeration and Air conditioning Applications, system components, ducting & distribution system, insulation. | 25 |
| 4 | Electrical installations - Drives, switchgears, relays, HT/LT distribution & sub-distribution system with symbols; Power tariff; Blue print reading; Industrial visits | 25 |

Suggested Books

- (i) Valuation of Plant and Machinery (Theory & Practice) by Kirit Budhbhatti
- (ii) Perry's Hand Book
- (iii) Career's Hand book for Air conditioning Practice
- (iv) Power Plant Engineering : Skroyzki & Vopat
- (vi) How Things Work Vol. I & II (The Universal Encyclopedia of Machines)

101380206: COMPREHENSIVE VIVA-VOCE CREDIT : 1

101380207: INDUSTRIAL PROCESSES CREDITS : 4

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|----------|--|---------------|
| 1 | Industrial History: The development of technology from about 1857 and the effects of technological advance on production and machinery design. The location of primary industries in relation to sources of energy and raw materials, labour and markets, development of transportation and the effect of industrial development on land use | 25 |
| 2 | Factory planning and lay out: Types of factory, plant layout, production techniques, automation, mass production, batch and one-off production; Principles of Industrial Processes: Material flow, process sequences, automation and process control | 25 |
| 3 | Industrial Processes: The normal processes, methods of manufacture, plant and machinery utilized, flow diagrams and inventory compilation for the following specific industries: textiles, dairy, ice cream and vegetable oil. The nature and function of trade specific machinery in any of the above industries | 25 |
| 4 | The normal processes, methods of manufacture, plant and machinery utilized, flow diagrams and inventory compilation for the following specific industries: <ul style="list-style-type: none"> • iron, steel & non-ferrous metal production • chemical and pharmaceutical • plastic and rubber • paper and paper products | 25 |

| | | |
|--|---|--|
| | <ul style="list-style-type: none"> • printing, binding and publishing • food and drink • cement and ceramic tiles <p>The nature function and inter-relationship of trade specific machinery in any of the above industries</p> | |
|--|---|--|

Suggested Books

- (i) Production Management by Lockyer, Published by Pitman
- (ii) How Things work, the Universal Encyclopaedia of Machines two Volumes by Paladin
- (iii) Parry's Chemical Engineers Handbook
- (iv) Manufacturing Technology by Hodder and Stoughton

In addition to the above recommended reading, students are advised to refer to books on individual industries and manufacturing processes, paying particular attention to process flow diagram.

101380208 : WATER POLLUTION AND CONTROL TECHNOLOGY CREDITS : 4

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|----------|--|---------------|
| 1 | Supply of water: Sources of water and their characteristics: water from precipitation (Strom water), surface water, ground water. Water Quantity: Water and Its Properties, Necessity of Water, Water Demand, Factor Affecting Water Demand, Population Forecast by Different Methods. Sampling, sample preservation, physical characteristics, chemical characteristics and biological characteristics, drinking water standards. | 25 |
| 2 | Groundwater: Introduction, types of aquifers, means to draw groundwater, Ground water conservation, seepage from surface water, artificial recharge, saline water intrusion - Causes and remedies of saline intrusion. | 25 |
| 3 | Water treatment: Conventional water treatment process, Screening, chemical handling and feeding, coagulation and flocculation, sedimentation, Filtration, Theory of filtration, filtration slow sand, rapid sand and pressure, filters. Disinfection; Criteria for good disinfectant, mechanisms of disinfection, factors affecting efficiency of disinfection, chlorination – chlorine chemistry, chlorination practices in India. Aeration, limitation of aeration, types of aerators. | 25 |
| 4 | Advanced water treatments – membrane technology; Microfiltration, Ultrafiltration, Nanofiltration Reverse Osmosis, Other treatment technologies: Ion Exchange, Water Softening, Adsorption, Electrodialysis. | 25 |

Suggested Books

1. Besseliere, E and Schwartz. 1975. Treatment of Industrial Wastes, McGraw Hill.
2. Birdie, G.S. 2002. Water Supply and Sanitary Engineering. Dhanpatraj and Sons Press.
3. Fair, G.M. Geyer, T.C. and Okun, D.A. 1984. Water and waste water Engineering. Vol. I and II, John Wiley and Sons.
4. Garg, S.K. Water and Sewage Treatment. 2002. Blackwell Publishing.
5. Mahajan 1985. Pollution control in process industries. Tata McGraw Hill
6. Metcalf and Eddy Inc. 1979. Waste water Engineering treatment, Disposal, Reuse. Tata McGraw Hill Publ. Co. Ltd.

Third Semester

101380301: ENVIRONMENTAL IMPACT ASSESSMENT CREDITS : 2

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|------|---|---------------|
| 1 | Environment: definition; air, land, water, vegetation, aquatic life, climate and the systems, which interact with nature | 25 |
| 2 | Why environmental studies? - a holistic approach to environmental problems | 25 |
| 3 | Environment and valuation - Differences between the 'open market price and the negative value consequent on environmental impact; environmental issues of air pollution, acid rain, ozone layer depletion/destruction, water pollution etc.; environmental statement as to effects, negative or positive; measures to restore the damage; cost of cure. Stigma due to environmental factors | 25 |
| 4 | Environmental impact assessment:- i) Baseline surveys and data collection on environmental levels and pollutants; ii) Preparation of environmental status report; iii) Legal and permissible levels of environmental pollutants; iv) Analysing existing situation against permissible levels to identify excesses; v) Alternative methods to reduce pollutants to permissible levels through technical process, other solutions; vi) Social - cost-benefit analysis of solutions proposed vii) Recommended measures for short term reduction and long term elimination of negative effects; viii) Environmental Management Plan (EMP) and implementation strategy ix) Financial allocations for EMP; Outlines of environmental legislations : Forest Act, Mining Act, Industrial Health & Safety Act, Municipal Acts, Water Pollution Act, Air Pollution Act, Environment Protection Act, Wild Life (Protection) Act, Archaeological Monuments (Protection) Act etc. Leading case laws on environmental issues | 25 |

Suggested Books

- (i) Environmental Impact Assessment by Canter, Mc Graw Hill
- (ii) Environmental Impact Analysis by R.K. Jain et al
- (iii) Environmental Strategy and Concern by Diwan
- (iv) Water Pollution (Prevention) Control Act, 1974, Govt. of India
- (v) Air Pollution (Prevention) Act, 1981, Govt. of India
- (vi) Environment (Protection) Act, 1986, Govt. of India
- (vii) Guidelines for Environmental clearance of various projects, Dept. of Environment, Govt. of India.
- (viii) Forest Conservation Act, 1980, Govt. of India
- (ix) Environmental Laws and Policy in India, By Shyam Divan and Armin Rosencranz, Oxford University Press, New Delhi

**101380302 : FINANCE, BUSINESS AND MANAGEMENT STUDIES
(FINANCE, BUSI. & MGNT. STUDIES)
CREDITS : 2**

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|----------|--|---------------|
| 1 | Goals and functions of finance organization, setting financial controlling system – planning and budgeting; Structuring of balance sheet. | 25 |
| 2 | Financial analysis for management decisions – tools of financial analysis - ratio analysis – fund flow, cash flow analysis; Management of working capital - components of working capital importance of working capital. | 25 |
| 3 | Investment decision – decision rule, discounted and non-discounted methods – NPV & IRR. | 25 |
| 4 | Capital structuring; Mergers and acquisitions for corporate restructuring – valuation of corporate organizations; Managing business – large, medium & small companies. | 25 |

Suggested Books

- (i) Financial Management - 8th edition I.M. Pandey, Vikas Publication, New Delhi

**101380303: PRINCIPLES OF INSURANCE AND LOSS ASSESSMENT
(PRIN. OF INSURANCE & LOSS ASSE.)
CREDITS: 4**

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|----------|--|---------------|
| 1 | Principles and legal concepts in relation to insurance of buildings and plant & machinery. The contract of insurance. Insurable interests and liability to insure. Duties of the insurer and the insured | 25 |
| 2 | The insurance policy; terms and conditions, perils, beneficial and restrictive clauses. Basics of Fire Insurance Policy and Engineering Policy. Different types of policies; Technicalities and classification of risk; safeguards, property protection. Importance of risk management in insurance sector and its techniques. The insurance market and functions of the insurance broker. | 25 |
| 3 | Valuation principles and techniques in relation to insurance loss assessment; valuation bases, value at risk, sum insured and condition of average, inflation provisions, other contents, obsolescence and betterment | 25 |
| 4 | Principles of claim settlement. Functions of the loss assessor and loss adjuster. Obligations and rights of insurer and insured. Third party claims; Consequential loss insurance, its scope and intention, policy conditions, definition of terms, approach to the consequential loss claim | 25 |

Books for Study:

- (i) Modern Law of Insurance in India by Murty/Sharma
(ii) Practice of General Insurance by Federation of Insurance Institutes
Universal Insurance Building, Sir P.M. Road, Bombay 400 001
(iii) Principles of General Insurance by Insurance Institute of India
P.M. Road, Bombay 400 001

- (iv) Fire Insurance Claims by Federation of Insurance Institutes
Universal Insurance Building, Sir P.M. Road, Bombay 400 001
- (v) IC 34 – General Insurance By: Insurance Institute of India

101380304: LEGAL STUDY – II
CREDITS : 4

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|-------------|--|----------------------|
| 1 | Sale of goods and agreements to sell, seller's obligations as to delivery time, title, description, fitness, quality and quantity; exclusion of obligations, sales by sample, passing of property in goods. | 25 |
| 2 | Transfer of title by non-owner, remedies for breach of contract; rights of unpaid seller against goods. | 25 |
| 3 | Licensing of industries and regulation of industrial activities under various laws; viz., revenue code, industrial licensing laws etc. | 25 |
| 4 | Salient features of various acts such as - Factory Act, - Electricity Act, - Labour Laws Outlines of environmental laws having direct bearing on valuation of industrial undertaking/plant and machinery | 25 |

Suggested Books

- (i) Sale of Goods Act by Pollock/Mulla
- (ii) Sale of Goods Act by P.R. Aiyar
- (iii) Hand book of Electricity Laws by Justice Mallecl
- (iv) Environmental Law and Policy in India Cases, Materials & Statutes by Divan/Nobles/Rosencranz
- (v) Law and Practice of Property Transaction by G.M.Divekar
- (vi) The Factories Act by L.L.A
- (vii) Commentaries on Factories Act, 1948 by K.D. Srivastava
- (viii) The Workmen's Compensation Act with Rules by L.L.A
- (ix) Workmen's Compensation Act, 1923 by R.Aiyar/K. Aiyar
- (x) Employer's Guide to Labour Laws by S.R.Samant
- (xi) Labour Laws one should know by Nabhi's

**101380305: VALUATION OF PLANT AND MACHINERY – III
(VALUATION OF P&M-III)
CREDITS : 4**

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|----------|---|---------------|
| 1 | Meaning and computation of terms - functional, technological and economic obsolescence | 25 |
| 2 | VALUATION OF PLANT & MACHINERY IN LEASING AND HIRE PURCHASE ➤ Difference between leasing and hire purchasing ➤ Interpretation and classification - finance lease and operating lease ➤ Various types of finance leases. ➤ Treatment of leased assets in company accounts - guidance notes and accounting practices for leased plant and machinery as prescribed by Institute of Chartered Accountants of India. ➤ Hire purchase accounting ➤ Role of a Valuer in lease and hire purchase transactions- salient features of a valuation report in sale & lease-back transaction | 25 |
| 3 | Overview of industrial structure in India. Historical perspective on industrial policy and features of the policy currently in vogue. Impact of current industrial policy on industrial investment. Industrial policy announcement of various States with special reference to incentives and concessions available for industrial investment. Policy for small scale industries. Need to keep track of changes in policy in view of their impact on valuation practice | 25 |
| 4 | Institutional arrangement for provision of industrial credit. Credit flow to industries. Role and functions of specialized development financial institutions, such as, Industrial Development Bank of India, Industrial Credit and Investment Corporation of India Ltd, Small Industries Development Bank of India, Industrial Finance Corporation of India Ltd. Industrial Reconstruction Bank of India, National Small Industries Corporation of India, Unit Trust of India, Life Insurance Corporation, General Insurance Corporation etc.; Role and functions of State Financial Corporations, and State Industrial Investment Development Corporations; Bank finance to industries; Valuation requirements for financial institutions and banks; Future Industrial scenario; The effect of inflation, income tax, corporation tax, government grants and incentives on the value of plant and machinery; Industrial visits. | 25 |

Suggested Books

- (i) Leasing by Shri Vinod Kothari
- (ii) Publications of Central Government and State Government Agencies involved in Industrial development.
- (iii) Lease Financing and Hire Purchase by Dr. J.C. Verma
- (iv) Appraising of Machinery and Equipment, Edited by John Alico
Published by American Society of Appraisers
ISBN - 07-001475-2, Mc Graw Hill, New Delhi
- (v) Valuation of Plant and Machinery by C.J.C. Derry
Property Valuation Hand Book B5
Published by Centre for Advanced Land Use studies
College of Estate Management
- (vi) Guidance Note of the Institute of Chartered Accountants of India on leasing.
- (vii) International Accounting Standard No. 17 on Lease Accounting.

**101380306: VALUATION OF PLANT AND MACHINERY – IV
(VALUATION OF P&M-IV)
CREDITS : 4**

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|----------|--|---------------|
| 1 | Valuation for financial statement - historic cost and current cost accounting conventions Overview of Financial Reporting Standards-IFRS, IFRS-1, IAS-16, IAS-36 AS-28 IFRS-3 | 25 |
| 2 | Valuation of specialized machineries / properties like (a) Jigs & fixtures (b) Press Tools (c) Moulds (d) Patterns (e) Dies and Special tools (f) Custom built machineries manufactured by the company by consuming its own material and labour (g) Petrol filling stations (h) Hotels (i) Plant structures and specialized industrial buildings which have no alternative use; Elementary study of docks and harbours; Salient features of Land Acquisition Act, 1894 and The right to fair compensation and transparency in land acquisition, rehabilitation and resettlement Act, 2013; Assessment of compensation for compulsory purchase, disturbance or total extinguishments claims. | 25 |
| 3 | Study of the following literature:- International Valuation Standards published by International Valuation Standards Committee, Manual of Valuation/Guidance notes in relation to valuation of plant and machinery published by Royal Institution of Chartered Surveyors. | 25 |
| 4 | Study of guidance notes and accounting practice for revaluation of fixed assets in books of account published by Institute of Chartered Accountants of India from time to time; Case laws - affecting valuation of plant and machinery; Valuer's role, functions and responsibilities; Code of ethics for valuers; Industrial visits. | 25 |

Suggested Books

- (i) Valuation of Plant and Machinery (Theory & Practice) by Kirit Budhbhatti
- (ii) Guidance notes published by Institution of Chartered Accountants of India on Valuation of Fixed Assets
- (iii) Valuation of Plant and Machinery by C.J.C. Derry
Property Valuation Hand Book B5
Published by Centre for Advanced Land Use studies
College of Estate Management
- (iv) Inflation Accounting by W.T. Baxter
- (v) Industrial Valuation by Karlake and Nichlos
Published by Estate Gazettes U.K.
- (vi) Current Value Accounting - A practical guide for business
Edited by Warren Chippendale, Philips L. Defliese
Published by AMCON, ISBM - 0 - 8144-5433-X
- (vii) Land Acquisition Act 1894 by V.G. Ramchandra
- (viii) Manual of Valuation/Guidance Notes in relation to valuation of plant and machinery published by Royal Institution of Chartered Surveyors, NewZealand Institute of Plant and Machinery Valuers, The European Group of Valuers of Fixed assets, Appraisal Foundation U.S.A.

**101380307: COMPREHENSIVE VIVA-VOCE
CREDIT : 1**

101380308 : REPORT WRITING

CREDITS : 4

The subject will cover the teaching of how to write reports for various purposes for which a valuer is normally called upon for advice in general practice.

Suggested Books

- (i) Mastering Technical Writing by Joseph C. Mancuso
- (ii) The Technical Writer's Hand book by Matt Young
- (iii) Hand book for Writers and editors by S Sreenivas Rao.
Academic Book Centre, 10, Walkeshwar, Ambawadi, Ahmedabad-15.

**101380309: SUSTAINABLE DEVELOPMENT
CREDITS : 4**

| UNIT | DESCRIPTION | WEIGHTAGE (%) |
|----------|---|---------------|
| 1 | Introduction to sustainable development: Concept of sustainable development, Rio earth Summit (1992), Brundtli and commission report, scheme of sustainability: economic, social, environmental; indicators of sustainable development and its selection criteria, Agenda 21 World Summit on Sustainable Development, Local agenda 21 (Earth Summit 2002), planning (for Sustainable Development). | 25 |
| 2 | Global challenges of sustainable development: poverty, pollution, population, finance for sustainable development, health, nutrition, sanitation, energy crisis, disasters, desertification, biopiracy etc. Currencies for evaluations of sustainable development- Biophysical measurements; Environmental degradations and conservation issues; Global change and sustainability issues: Climate change, biological invasion, bio-diversity concerns | 25 |
| 3 | Millennium development goals and its recent status (global, Indian), approaches to sustainable development: natural resource management, capacity building, Ecosystem concept in space and time; Ecosystem level processes and landscape level processes; the concept of sustainable development temporal and spatial dimensions. | 25 |
| 4 | Human resource development, pollution management, green policy development, good governance and recycling, reuse and recovery. Ecosystem and social processes in: (a) Rehabilitation of degraded rural landscape, (b) Rehabilitation of unbalanced soils, (c) Rehabilitation of specialized habitats, e.g. water bodies, mangroves; (d) Mined area rehabilitation participatory research and education environmental decision making with people initiates. | 25 |

1. AID Environment (1997) Strategic Environmental Analysis: A New Planning Framework for Sustainable Development, AIDEnvironment, Amsterdam
2. Banuri, T and Holmberg, J (1992) Governance for Sustainable Development: a Southern Perspective, IIED, London

3. Carew-Reid, J (ed) (1997) Strategies for Sustainability: Asia, IUCN in association with Earthscan, London
4. Degnbol, T (1996) The Terroir Approach to Natural Resource Management: Panacea or Phantom? – the Malian Experience, working paper no 2/1996, International Development Studies, Roskilde University, Denmark
5. Earthscan. 2002. Sustainable Development Strategies: A Resource Book. Organisation for Economic Co-operation and Development, Paris and United Nations Development Programme, New York.
6. Grieg-Gran, M (2001) 'Investment in Sustainable Development: The Public–Private Interface', in The Future is Now, vol 2, IIED, London

FOURTH SEMESTER

101380401: FIELD WORK AND SEMINAR

CREDITS : 8

Students will be required -

- to collect data from various industries about plant and machinery with specifications
- to collect price for various plant and machinery by inviting quotation and market inquiry
- to visit special types of property like Industrial Plant, Cold Storage, Cinema, Hotel etc. and prepare a report on the same

The students will be assigned one topic related to valuation and they will be asked to select another topic of their own choice. They will be allowed a fortnights time to prepare papers for presentation before a gathering to be chaired by a member of the faculty.

After presentation there will be a session for questions and answers. The performance of the students will be assessed by a team of faculty members.

101380402: PROJECT WORK

CREDITS : 16

The student will be required to prepare independent project report after field survey and data compilation for valuation of plant and machinery.

101380403: COMPREHENSIVE VIVA-VOCE

CREDIT : 1