

**Master of Valuation (Plant  
Machinery and Vehicle)**

## MASTER OF VALUATION IN PLANT, MACHINERY AND Vehicle

### First Semester

Sr no.	Course no.	Course Title	Total Marks	Internal	External
1.	MAV101	PRINCIPLES OF ECONOMICS	100	40	60
2.	MAV102	BOOK KEEPING AND ACCOUNTANCY	100	40	60
3.	MAV103	ELEMENTARY SURVEYING AND ENGINEERING DRAWING	100	40	60
4.	MAV104	INTRODUCTION TO STATISTICS	100	40	60
5.	MAV105	PRINCIPLES OF VALUATION	100	40	60
6.	MAV106	ELE. OF LAWS AND JURISPRUDENCE	100	40	60
		<b>TOTAL</b>	<b>600</b>	<b>240</b>	<b>360</b>

### Second Semester

1.	MAV201	PRIN. OF INSURANCE & LOSS ASSE.	100	40	60
2.	MAV202	TOWN AND REGIONAL PLANNING	100	40	60
3.	MAV203	PRIN. OF M/C TOOLS & FAC. EQUIP	100	40	60
4.	MAV204	INDUSTRIAL PROCESSES	100	40	60
5.	MAV205	LEGAL STUDY-I	100	40	60
6.	MAV206	VALUATION OF P&M - I	100	40	60
7.	MAV207	VALUATION OF P&M - II	100	<b>40</b>	60
		<b>TOTAL</b>	<b>700</b>	280	<b>420</b>

## SECOND LEVEL

### Third Semester

1.	MAV301	ENVIRONMENTAL IMPACT ASSESSMENT	100	40	60
2.	MAV302	FINANCE, BUSI. & MGNT. STUDIES	100	40	60
3.	MAV303	LEGAL STUDY - II	100	40	60
4.	MAV304	VALUATION OF P&M-III	100	40	60
5.	MAV305	VALUATION P&M-IV	100	40	60
6.	MAV306	REPORT WRITING	100	40	60
7.	MAV307	FIELD WORK AND SEMINAR	100	<b>40</b>	60
		<b>TOTAL</b>	700	280	<b>420</b>

### Fourth Semester

1.	MAV401	PROJECT WORK	400		
		<b>TOTAL</b>	<b>400</b>		

**MASTER OF VALUATION (PLANT AND MACHINERY)**

**FIRST LEVEL**

**First Semester**

**PRINCIPLES OF ECONOMICS**

**BOOK KEEPING AND ACCOUNTANCY**

**ELEMENTARY SURVEYING AND ENGINEERING DRAWING**

**INTRODUCTION TO STATISTICS**

**PRINCIPLES OF VALUATION CREDITS**

**ELEMENTS OF LAWS AND JURISPRUDENCE (ELE. OF  
LAWS AND JURISPRUDENCE)**

## Second Semester

### PRINCIPLES OF INSURANCE AND LOSS ASSESSMENT (PRIN. OF INSURANCE & LOSS ASSE.)

#### TOWN AND REGIONAL PLANNING CREDITS

### PRINCIPLES OF MACHINE TOOLS AND FACTORY EQUIPMENT (PRIN. OF M/C TOOLS & FAC. EQUIP)

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	20
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.	20
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.	15
4	Cutting tools to include drills, reamers, taps and dies, milling cutters, shaped profile cutters, form cutters, hobs, broaches and single-point cutting tools	15
5	Inspection and measuring equipment to include projectors and enlargers, single and multi-axis measuring machines, verniers and micrometers, thread, ring and plug gauges, protractors, straight edges, squares, levels, sine bars and tables, slip gauges etc.	15

<b>6</b>	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.	<b>15</b>
----------	---	-----------

### Books for Study:

- (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.

### INDUSTRIAL PROCESSES

UNIT	DESCRIPTION	WEIGHTAGE (%)
<b>1</b>	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	<b>20</b>
<b>2</b>	Factory planning and lay out: Types of factory, plant layout, production techniques, automation, mass production, batch and one-off production	<b>20</b>
<b>3</b>	Principles of Industrial Processes: Material flow, process sequences, automation and process control	<b>20</b>
<b>4</b>	Industrial Processes: The normal processes, methods of manufacture, plant and machinery utilized, flow diagrams and inventory compilation for the	<b>20</b>

	following specific industries: textiles, dairy, ice cream and vegetable oil. The nature and function of trade specific machinery in any of the above industries	
<b>5</b>	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"> <li>• iron, steel &amp; non-ferrous metal production</li> <li>• chemical and pharmaceutical</li> <li>• plastic and rubber</li> <li>• paper and paper products</li> <li>• printing, binding and publishing</li> <li>• food and drink</li> <li>• <b>cement and ceramic tiles</b></li> </ul> The nature function and inter-relationship of trade specific machinery in any of the above industries	<b>20</b>

### Books for Study:

- (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.

### LEGAL STUDY - I

<b>UNIT</b>	<b>DESCRIPTION</b>	<b>WEIGHTAGE (%)</b>
<b>1</b>	<ul style="list-style-type: none"> <li>➤ 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</li> <li>➤ Memorandum of the sale; The deposit, rights of auctioneer against vendor and purchaser, Sales under statute and by order of the court</li> </ul>	<b>25</b>
<b>2</b>	<ul style="list-style-type: none"> <li>➤ General principles of Insolvency law - the Insolvency Act and rules made thereunder</li> <li>➤ The role of insolvency practitioners - their powers and obligations - particularly as they affect the treatment and disposal of assets</li> </ul>	<b>25</b>
<b>3</b>	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	<b>20</b>
<b>4</b>	The powers and duties of official liquidators and court receivers. The basis, method, scope and duration of their appointment.	<b>20</b>

	Receivership and liquidation procedures	
<b>5</b>	Law of arbitration and conciliation : Salient features	<b>10</b>

**Books for Study:**

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

**VALUATION OF PLANT AND MACHINERY – I (VALUATION OF P&M-I)**

<b>UNIT</b>	<b>DESCRIPTION</b>	<b>WEIGHTAGE (%)</b>
<b>1</b>	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	<b>20</b>
<b>2</b>	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	<b>10</b>
<b>3</b>	Valuation of Plant & Machinery for municipal rating purposes	<b>5</b>
<b>4</b>	Indexation; RBI indices - their uses and limitations	<b>20</b>
<b>5</b>	Plant records and asset registers - their compilation, uses and limitations; Preparation of inventories	<b>20</b>
<b>6</b>	Plant and machinery normally valued with the premises	<b>7</b>
<b>7</b>	Principles of construction and functional design elements of industrial buildings. Constructional requirement under regulatory laws	<b>8</b>
<b>8</b>	Industrial visits	<b>10</b>

**Books for Study:**

- (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.

**VALUATION OF PLANT AND MACHINERY – II  
(VALUATION OF P&M-II)**

UNIT	DESCRIPTION	WEIGHTAGE (%)
	<b>Study of basic engineering services:</b>	
<b>1</b>	Energy generation - Boilers & their accessories Heat Exchangers Pumps, Fans, Blowers and Compressors Solar systems Process Heating Thermopacs Water softening plant / D.M. Plant Energy saving Diesel generation	<b>40</b>
<b>2</b>	Energy utilization - Refrigeration and Air conditioning Applications, system components, ducting & distribution system, insulation	<b>40</b>
<b>3</b>	Electrical installations - Drives, switchgears, relays, HT/LT distribution & sub-distribution system with symbols  Power tariff Blue print reading Industrial visits	<b>20</b>

**Books for Study:**

- (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
- (v) How Things Work Vol. I & II (The Universal Encyclopedia of Machines)



## **SECOND LEVEL**

### **Third Semester**

#### **ENVIRONMENTAL IMPACT ASSESSMENT**

#### **FINANCE, BUSINESS AND MANAGEMENT STUDIES (FINANCE, BUSI. & MGNT. STUDIES)**

#### **LEGAL STUDY – II**

<b>UNIT</b>	<b>DESCRIPTION</b>	<b>WEIGHTAGE (%)</b>
<b>1</b>	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; transfer of title by non-owner, remedies for breach of contract; rights of unpaid seller against goods	<b>50</b>
<b>2</b>	Licensing of industries and regulation of industrial activities under various laws; viz., revenue code, industrial licensing laws etc.	<b>15</b>
<b>3</b>	Salient features of various acts such as - Factory Act, - Electricity Act, - Labour Laws	<b>20</b>
<b>4</b>	Outlines of environmental laws having direct bearing on valuation of industrial undertaking/plant and machinery	<b>15</b>

#### **Books for Study:**

- (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

**VALUATION OF PLANT AND MACHINERY – III  
(VALUATION OF P&M-III)**

UNIT	DESCRIPTION	WEIGHTAGE (%)
<b>1</b>	Meaning and computation of terms - functional, technological and economic obsolescence	<b>20</b>
<b>2</b>	<b>VALUATION OF PLANT &amp; MACHINERY IN LEASING AND HIRE PURCHASE</b> <ul style="list-style-type: none"> <li>➤ Difference between leasing and hire purchasing</li> <li>➤ Interpretation and classification - finance lease and operating lease</li> <li>➤ Various types of finance leases.</li> <li>➤ 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.</li> <li>➤ Hire purchase accounting</li> <li>➤ Role of a Valuer in lease and hire purchase transactions- salient features of a valuation report in sale &amp; lease-back transaction</li> </ul>	<b>20</b>
<b>3</b>	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	<b>20</b>
<b>4</b>	<ul style="list-style-type: none"> <li>➤ 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.</li> <li>➤ Role and functions of State Financial Corporations, and State Industrial Investment Development Corporations.</li> <li>➤ Bank finance to industries</li> <li>➤ Valuation requirements for financial institutions and banks.</li> <li>➤ Future Industrial scenario</li> </ul>	<b>20</b>
<b>5</b>	The effect of inflation, income tax, corporation tax, government grants and incentives on the value of plant and machinery	<b>10</b>
<b>6</b>	Industrial visits	<b>10</b>

## Books for Study:

- (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.

### VALUATION OF PLANT AND MACHINERY – IV (VALUATION OF P&M-IV)

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	20
2	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	05
3	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	15
4	Elementary study of docks and harbours	5
5	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	10
6	Study of the following literature:- (i) International Valuation Standards published by International Valuation Standards Committee. (ii) Manual of Valuation/Guidance notes in relation to valuation of plant and machinery published by Royal Institution of Chartered Surveyors	15
7	Case laws - affecting valuation of plant and machinery	10

<b>8</b>	Valuer's role, functions and responsibilities Code of ethics for valuers	<b>10</b>
<b>9</b>	Industrial visits	<b>10</b>

### **Books for Study:**

- (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 Karslake 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.

### **REPORT WRITING**

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.

### **Books for study:**

- (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.

### **FIELD WORK AND SEMINAR**

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.

## **Fourth Semester**

### **PROJECT WORK**

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