CURRICULUM

FOR

DIPLOMA IN CIVIL /CTM ENGINEERING

(FOURTH SEMESTER)

Scheme: **Diploma . Civil .Engineering . _ JULY 2008**

Implemented from **session 2008-2009**

Under semester system

CURRICULUM DEVELOPMENT CENTRE

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA,

BHOPAL (M.P.)

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA
BHOPAL
DIPLOMA IN CIVIL ENGINEERING

SEMESTER	**FOURTH SEMESTER**
SCHEME	JULY-08
COURSE CODE	**401**
NAMEOF THE COURSE(SUBJECT)	**ADVANCE SURVEYING**
OLD PAPER CODE	
NEW PAPER CODE	6176
COMMON WITH PROGRAMME	CTM (Exam Code 840)
BRANCH	C03,
LECTURE HRS. PER WEEK	TH. 03 PR. 04
LECTURE HRS. PER SEMESTER	TH. 45 PR. 60

RATIONALE

This is an applied technology Course Which is intended to teach Students application of facts, Concepts, Principles, and procedures in surveying and Levelling. It is also intended to teach students theodolite traversing and Modern Surveying equipments. With this knowledge and skill, He will be able to choose appropriate survey and levelling methods depending on requirement to carry out survey works for various civil engineering activities.

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **401 ,** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **ADVANCE SURVEYING** PAPER CODE: **6176**

SCHEME OF STUDIES AND SPECIFICATION TABLE

Lectures: **3** Hrs. per week
Practical:**4** Hrs. per week

S. No.	Topics	SCHEME OF STUDIES		
		Theory Hrs	Practical Hrs	Total Hrs
1	Plane Table Survey	05	10	15
2	Theodolite Survey	10	16	26
3	Tacheometric Survey	10	10	20
4	Curves	08	06	14
5	Advanced Survey Equipments	08	16	24
6	Aerial Survey and Remote sensing	04	02	06
	Total	**45**	**60**	**105**

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **401 ,** COMMON WITH PROGRAMME CTM
(Exam Code 839)

NAME OF COURSE: - **ADVANCE SURVEYING** PAPER CODE: **6176**

CONTENTS

Lectures: **3** Hrs. per week
Practical:**4** Hrs. per week

S no	Course content	Hours of study
1	**PLANE TABLE SURVEY :** Principles of plane table survey. Accessories required. Setting out of plane table , Leveling ,Centering and orientation. Methods of plane table surveying – Radiation, Intersection, and Traversing. Merits and Demerits of plane table Surveying. situations where plane table survey is used. Use of Telescopic Alidade.	**05**
2	**THEODOLITE SURVEY:** Components of Transit Theodolite and Their functions. Technical terms used. Temporary adjustments of Transit Theodolite. Swinging the telescope, Transiting, Changing the face. Measurement of Horizontal angle, method of Repetition, errors eliminated by method of repetition. Measurement of Deflection angle. Measurement of Vertical angle. Measurement of magnetic bearing of a line by Theodolite. Prolonging a Straight line. Sources of errors in Theodolite Surveying. Permanent adjustment of transit Theodolite (only relationship of different axes of Theodolite.) Traversing with Theodolite – Method of included angles, locating details, checks in closed traverse,Calculation of bearings from angles. Traverse Computation - Latitude, Departure Consecutive Co-ordinates error of Closure, Distribution of a angular error, balancing the traverse by Bodwitch rule and Transit Rule, Gale's traverse table. simple problems on above topic.	**10**
3	**TACHEOMETRIC SURVEY:** Principle of Tacheometry. Essential requirements of Tacheorneter. Use of Theodolite as a Tacheometer with staff held in vertical and fixed hair method (No derivation). Determination of tacheometric constants, simple numerical problems on above topics	**10**
4	**CURVES:** Types of curves used in road and railway alignments. Notations of simple circular curve. Designation of curve by radius and degree of curves. Method of Setting out curve by offset from Long chord method and Rankine's method of deflection. angles. Simple Numerical problems on above topics.	**08**

5	**ADVANCED SURVEY EQUIPMENTS:** Construction and use of one second Micro Optic Theodolite, Electronic Digital Theodolite. Features of Electronic Theodolite Principle of E.D.M, Components of E.D.M and their functions, use of E.D.M. Total station	**08**
6	**AERIAL SURVEY AND REMOTE SENSING:** Aerial Survey Introductions, definition, Aerial photograph. Remote Sensing – Introduction, Electro-Magnetic Energy , Remote sensing system- Passive system , Active system. Applications – mineral, land use / Land cover, Natural Hazards and Environmental engineering system.	**04**
	TOTAL	**45**

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL
DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **401 ,** COMMON WITH PROGRAMME CTM
(Exam Code 839)

NAME OF COURSE: - **ADVANCE SURVEYING** PAPER CODE: **6176**

LIST OF EXPERIMENTS

Lectures: **3** Hrs. per week
Practical:**4** Hrs. per week

S no	Course content	Hours of study
1	Using accessories carry out temporary adjustments of plane table. Locating details by method of Radiation.	3
2	Locating details with plane table by method of intersection.	3
3	Understanding the components of Theodolite and their functions, reading the vernier and temporary adjustments of theodolite.	2
4	Measurement of Horizontal angle by transit theodolite.	2
5	Measurement of Horizontal angle by method of Repetition.	2
6	Measurement of vertical angles by theodolite.	3
7	Measurement of Magnetic bearing of a line using theodolite.	2
8	Measurement of deflection angle by taking open traverse of 4 –5 sides.	2
9	To find Reduced levels and horizontal distances using theodolite as a Tacheometer.	5
10	To find constants of a given Tacheometer.	5
11	Study and use of 1 second Micro Optic Theodolite for measurement of Horizontal and Vertical angles.	3
12	Study of E.D.M. for knowing its components.	3
13	Use of EDM for finding horizontal and vertical distances and reduced levels.	5
14	Determine the geographical parameters by total station.	4
15	Use of Arial survey (GPS, google earth, ISRO satellite etc.)	02
	TOTAL	44

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DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**

COURSE CODE: **401 ,** COMMON WITH PROGRAMME CTM (Exam Code 839)

NAME OF COURSE: - **ADVANCE SURVEYING** PAPER CODE: **6176**

LIST OF PROJECTS

Lectures: **3** Hrs. per week
Practical:**4** Hrs. per week

S no	Projects	Hours of study
1	Plane table survey project for 5-6 sided traverse and locating details of buildings, Roads etc. by radiation and Intersection method , Sheet to be drawn by each student separately on A-1 size imperial drawing sheet.	**04**
2	Theodolite traverse Survey for a closed traverse of 5-6 sides for a small area.	**03**
3	Computation by Gale's traverse table. Plotting the traverse with details on A1 size imperial drawing sheet	**03**
4	Setting out simple circular curve by Rankine's method of Deflection angles for a given problem and plotting the details of curve on A-1 size imperial drawing sheet	**06**
	TOTAL	**16**

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DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **401 ,** COMMON WITH PROGRAMME CTM
(Exam Code 839)

NAME OF COURSE: - **ADVANCE SURVEYING** PAPER CODE: **6176**

LIST OF REFERENCE BOOKS

Lectures: **3** Hrs. per week
Practical:**4** Hrs. per week

S. No.	Title	Author	Publisher
1	Surveying and Levelling**,**	N N Basak,	Tata Mc Graw-Hill
2.	Surveying and Levelling Part I and II,	T .P. Kanetkar & S. V, Kulkarni,	PuneVidhyarthi Griha Prakashan.
3	Surveying and Levelling Vol. I and II	Dr. B. C. Punamiya	Laxmi Publication
4	Text book of Surveying,	S.K.Husain, M.S. Nagaraj	S. Chand and company
5	Surveying and Levelling Vol. I and II,	S. K. Duggal,	Tata Mc Graw-Hill
6	Plane Surveying,	A.M.Chandra,	New Age International Publishers
7	Higher Surveying,	A.M.Chandra	New Age International Publishers

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA
BHOPAL
DIPLOMA IN CIVIL ENGINEERING

SEMESTER	**FOURTH SEMESTER**
SCHEME	JULY-08
COURSE CODE	402
NAMEOF THE COURSE(SUBJECT)	**SOIL MECHANICS**
OLD PAPER CODE	
NEW PAPER CODE	6177
COMMON WITH PROGRAMME	CTM (Exam Code 840)
BRANCH	C03,
LECTURE HRS. PER WEEK	TH. 04 PR. 02
LECTURE HRS. PER SEMESTER	TH. 60 PR. 30

RATIONALE

Field of construction is an important area for pass out from polytechnic. Day to day supervision of construction work is an important function. Therein "Earth work" is an important item of the construction of Civil Engineering works e.g. Dams, embankments and cutting work in the construction of Roads and Railways, Pavement etc. for efficient supervision and proper execution of the earth work, the technicians must have knowledge of the basic principles of Soil Mechanics. Safe bearing capacity of soil is an important factor for the safety and design of a civil structure. Diploma pass outs have to work in the field, hence the knowledge of soil mechanics is necessary. Supervision of construction work rather than design of structure is considered more relevant to the job function of a technician and hence more emphasis is given to the practical aspect. However, necessary theoretical background has also been incorporated.

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL
DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **402 ,** COMMON WITH PROGRAMME CTM
(Exam Code 839)

NAME OF COURSE: - **SOIL MECHANICS** PAPER CODE: **6177**

SCHEME OF STUDIES AND SPECIFICATION TABLE

Lectures: **4** Hrs. per week
Practical:**2** Hrs. per week

S. No.	Topics	SCHEME OF STUDIES		
		Theory Hrs	Practical Hrs	Total Hrs
1	Physical Properties Of Soil	12	07	19
2	Classification Of Soil	10	06	16
3	Permeability Of Soil & Seepage Analysis	08	03	11
4	Shear Strength Of Soil	08	06	14
5	Bearing Capacity Of Soils And Earth Pressure	08	02	10
6	Compaction Of Soil & Stabilization	08	04	12
7	Site Investigation And Sub Soil Exploration	06	02	08
	Total	**60**	**30**	**90**

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL
DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **402 ,** COMMON WITH PROGRAMME CTM (Exam Code 839)
NAME OF COURSE: - **SOIL MECHANICS** PAPER CODE: **6177**

CONTENTS

Lectures: **4** Hrs. per week
Practical:**2** Hrs. per week

S no	Course content	Hours of study
1	**PHYSICAL PROPERTIES OF SOIL:** Soil as a three phase system. Water content, Determination of water content by oven drying method as per IS code. Void ratio, porosity and degree of saturation, density index. Unit weight of soil mass – bulk unit weight, dry unit weight, unit weight of solids, saturated unit weight, submerged unit weight. Determination of bulk unit weight and dry unit weight by core cutter method and sand replacement method as per IS code. Specific gravity, determination of specific gravity by pycnometer	**12**
2	**CLASSIFICATION OF SOIL :** Field identification tests of fine grained soil, IS. classification chart. Consistency of soil, stages of consistency, Atterberg's. limits of consistency viz. Liquid limit, plastic limit and shrinkage limit, plasticity index. Determination of liquid limit, plastic limit and shrinkage limit as per IS code. Classification of fine grained soil by using plasticity chart. Seive analysis of soil and sedimentation of soil, log, scale of particle size. Strokes law, Consistency limit diagram. Particle size distribution, mechanical sieve analysis as per. IS code particle size distribution curve, effective diameter of soil, Uniformity coefficient and coefficient of curvature, well graded and uniformly graded soils. Particle size classification of soils & IS classification of soil	**10**
3	**PERMEABILITY OF SOIL & SEEPAGE ANALYSIS :** Definition of permeability. Laminar and turbulent flow. Importance of permeability. Darcy's law of permeability, coefficient of permeability, typical values of coefficient of permeability for different soil. Factors affecting permeability. Determination of coefficient of permeability by constant head and falling head permeability tests, simple problems to determine coefficient of permeability. Seepage through earthen structures, seepage velocity, seepage pressure, phreatic line, flow lines and equipotential lines. Flow net, characteristics of flow net, application of flow net (no numerical problems)	**08**

4	**SHEAR STRENGTH OF SOIL :** Shear failure of soil, field situation of shear failure. Concept of shear strength of soil. Components of shearing resistance of soil – cohesion, internal friction. Mohr-coulomb failure theory (Coulomb's Law), Strength envelope, strength Equation. Purely cohesive and cohesion less soils. Laboratory determination of shear strength of soil – Direct shear test, Box shear test and tri-axial test Unconfined compression test & vane shear test, plotting strength envelope, determining shear strength parameters of soil	**08**
5	**BEARING CAPACITY OF SOILS AND EARTH PRESSURE :** Concept of bearing capacity, ultimate bearing capacity, safe bearing capacity and allowable bearing pressure. Terzaghi's analysis and assumptions made. Effect of water table on bearing capacity. Field methods for determination of bearing capacity – Plate load test and standard penetration test. Test procedures as Per IS:1888 & IS:2131. Typical values of bearing capacity from building code IS:1904. Definition of active earth pressure and passive earth pressure, structures subjected to earth pressure in the field. Earth pressure, effective pressure. Neutral pressure, and total pressure Magnitude of earth pressure. Rankines theory, Assumptions made in the Rankine's theory. Earth retaining structures. Earth pressure on earth retaining structures. Bearing capacity of soil during earthquake.	**08**
6	**COMPACTION OF SOIL & STABILIZATION:** Concept of compaction, purpose of compaction field situations where compaction is required. Standard proctor test – test procedure as per IS code, Compaction curve, optimum moisture content, maximum dry density, Zero air voids line. Modified proctor test. Factors affecting compaction. Field methods of compaction – rolling, ramming & vibration and Suitability of various compaction equipments. California bearing ratio, CBR test, significance of CBR value. Difference between compaction and consolidation. Concept of soil stabilization, necessity of soil stabilization. Different methods of soil stabilization – Mechanical soil stabilization, lime stabilization, cement stabilization, bitumen stabilization, fly-ash stabilization.	**08**
7	**SITE INVESTIGATION AND SUB SOIL EXPLORATION :** Necessity of site investigation & sub-soil exploration. Types of exploration – general , detailed. Method of site exploration open excavation & boring. Criteria for deciding the location and number of test pits and bores. Trial pits types of Augers. Auger boring, wash boring and percussion drilling. Disturbed & undisturbed soil samples for lab testing. Field identification of soil – dry strength test, dilitancy test & toughness test. Empirical correlation between soil properties and SPT values. Record of boring Bore hole log.	**06**
	TOTAL	**60**

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL
DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **402 ,** COMMON WITH PROGRAMME CTM (Exam Code 839)
NAME OF COURSE: - **SOIL MECHANICS** PAPER CODE: **6177**

LIST OF EXPERIMENTS

Lectures: **4** Hrs. per week
Practical:**2** Hrs. per week
(Any ten)

S no	Course content	Hours of study
1	Determination of water content of given soil sample by oven drying method as per IS Code.	2
2	Determination of bulk unit weight dry unit weight of soil in field by core cutter method as per IS Code.	2
3	Determination of bulk unit weight dry unit weight of soil in field by sand replacement method as per IS Code.	2
4	Determination of Liquid limit & Plastic limit of given soil sample as per IS Code.	6
5	Determination of grain size distribution of given soil sample by mechanical sieve analysis as per IS Code	2
6	Determination of coefficient of permeability by constant head test.	2
7	Determination of coefficient of permeability by falling head test Practical (Live demo or Prerecorded demo)	1
8	Determination of shear strength of soil using direct shear test.	2
9	Determination of shear strength of soil using Laboratory Vane shear test.	1
10	Determination of MDD & OMC by standard proctor test on given soil sample as per IS Code.	4
11	Determination of CBR value of given soil sample.	3
12	Determination of shear strength of soil using unconfined compressive strength.	1
13	Determination of shear strength of soil using tri-axial shear test.	2
	TOTAL	30

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**

COURSE CODE: **402 ,** COMMON WITH PROGRAMME CTM (Exam Code 839)

NAME OF COURSE: - **SOIL MECHANICS** PAPER CODE: **6177**

LIST OF REFERENCE BOOKS

Lectures: **4** Hrs. per week
Practical:**2** Hrs. per week

S. No.	Title	Author	Publisher
1	Soil Mechanics & Foundation Engineering,	Dr. B. C. Punmia,	Standard Book house, New Delhi.
2.	Soil Mechanics & Foundation Engineering,	V.N.S. Murthi	Tata McGraw Hill , New Delhi.
3	Soil Mechanics,	B. J. Kasmalkar	Pune Vidhyarti Griha, Pune
4	Geo-technical Engineering,	Gulhati & Dutta	Tata McGraw Hill , New Delhi

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA
BHOPAL

SEMESTER	**FOURTH SEMESTER**
SCHEME	JULY-08
COURSE CODE	403
NAMEOF THE COURSE(SUBJECT)	**MECHANICS OF STRUCTURES**
OLD PAPER CODE	
NEW PAPER CODE	6178
COMMON WITH PROGRAMME	CTM (Exam Code 840)
BRANCH	C03,
LECTURE HRS. PER WEEK	TH. 06 PR. 00
LECTURE HRS. PER SEMESTER	TH. 90 PR. 00

RATIONALE

There are different types of structure depending upon type of materials like concrete steel, wood etc. They are subjected to various types of loading such as axial load, shear load, transverse load etc. This subject helps the student to analyze the internal behavior of structural members under different types of loading and to analyze trusses by using analytical and graphical method. The knowledge gained in this subject is helpful to study then subject Theory of Structure.

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL
DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **403** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **MECHANICS OF STRUCTURES** PAPER CODE: **6178**

SCHEME OF STUDIES AND SPECIFICATION TABLE

Lectures: **6** Hrs. per week

S. No.	Topics	SCHEME OF STUDIES		
		Theory Hrs	Practical Hrs	Total Hrs
1	Stress & Strain	12	-	12
2	Elastic Constants & Principal Stresses	10	-	10
3	Shear Force And Bending Moment	24	-	24
4	Moment Of Inertia	10	-	10
5	Stresses In Beams	12	-	12
6	Analysis Of Trusses	12	-	12
7	Columns	10	-	10
	Total	**90**	**-**	**90**

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL
DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **403** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **MECHANICS OF STRUCTURES** PAPER CODE: **6178**

CONTENTS

Lectures: **6** Hrs. per week

S no	Course content	Hours of study
1	**STRESS & STRAIN :** Definition of rigid body, plastic body, mechanical properties of metal such as elasticity & elastic limit . Definition of stress, strain, modulus of elasticity, S.I. Unit. Classification of stress, strain, Sign convention. Stress, strain curve for mild steel and HYSD bar , yield stress/ proof stress, Ultimate stress, breaking stress and percentage elongation. Deformation of body due to axial load. Deformation of a Body subjected to axial forces. Deformation of body of stepped c/s due to axial load, max. stress and min. stress induced. Stresses in bars of composite section & deformation. Shear stress, shear strain & modulus of rigidity, complementary shear stress, state of simple shear, punching shear.	**12**
2	**ELASTIC CONSTANTS & PRINCIPAL STRESSESS :** Definition of lateral strain, Poisson's ratio, Change in lateral dimensions. Volumetric strain due to uni-axial force and change in volume. Biaxial and tri-axial stresses and volumetric strain & change in volume. Definition of bulk modulus, volumetric strain. Relation between modulus of elasticity, modulus of rigidity and bulk modulus. Definition of principal planes & principal stresses. Principal planes & stress due to bi-axial stress system & due to state of simple shear(Analytical method only). Strain Energy : Types of loading – gradual, suddenly applied load & Impact load. Definition of strain energy, modulus of resilience and proof resilience. Comparison of stresses due to gradual load, sudden load and impact load.	**10**
3	**SHEAR FORCE AND BENDING MOMENT :** Types of beams - cantilever, simply supported, fixed and continuous beams, types of loading- point load, uniformly distributed load, support reactions for determinate structures. Concept of shear force and bending moment, sign convention. Relation between bending moment, shear force and rate of loading. Shear force and bending moment diagrams for simply supported beams, overhanging beams and cantilever subjected to point loads, UDL and couples, point of contra flexure.	**24**

4	**MOMENT OF INERTIA :** Concept of moment of inertia, M.I of plane areas such as rectangle, triangle, circle, semicircle and quarter circle. Parallel axis and perpendicular axis theorem, M.I of composite sections, built up sections, symmetrical and unsymmetrical sections, radius of gyration & polar moment of inertia.	**10**
5	**STRESSES IN BEAMS:** Bending Stresses in Beams: Concept of pure bending, theory of simple bending, assumptions in theory of bending, neutral axis, bending stresses and their nature, bending stress distribution diagram, moment of resistance. Application of theory of bending to symmetrical and unsymmetrical sections. Shear stresses in beams, Shear stress equation, meaning of terms in equation, shear stress distribution for rectangular, hollow rectangular, circular sections and hollow circular sections, I sections and T sections. Relation between max. shear stress and average shear stress.	**12**
6	**ANALYSIS OF TRUSSES:** Definition frames, classification of frames, perfect, imperfect, redundant and deficient frame, relation between members and joints, assumption in analysis. Method of joint, method of section and graphical method to find nature of forces.	**12**
7	**COLUMNS :** End conditions, and equivalent length. Radius of gyration and slenderness ratio classification as per mode of failure. Euler's and Rankine's formulae. Use of Euler's and Rankine's formulae in solving various problems.	**10**
	TOTAL	**90**

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **403** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **MECHANICS OF STRUCTURES** PAPER CODE: **6178**

LIST OF REFERENCE BOOKS

Lectures: **6** Hrs. per week

S. No.	Title	Author	Publisher
1	Strength of Materials	F. L. Singer,	Harpe Collins Publishers India , Delhi
2.	Strength of Materials,	R. S. Khurmi,	S. Chand & Company, Delhi
3	Mechanics of Structures,	S. B. Junnarkar- volume –I & II,	Charotar Publishing House, Anand.
4	Strength of Materials,	Sadhu Singh.	

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA
BHOPAL
DIPLOMA IN CIVIL ENGINEERING

SEMESTER	**FOURTH SEMESTER**
SCHEME	JULY-08
COURSE CODE	404
NAMEOF THE COURSE(SUBJECT)	**TRANSPORTATION ENGINEERING - I**
OLD PAPER CODE	
NEW PAPER CODE	
COMMON WITH PROGRAMME	6176 CTM (Exam Code 840)
BRANCH	
LECTURE HRS. PER WEEK	C03,
LECTURE HRS. PER SEMESTER	TH. 04 PR. 02 TH. 60 PR. 30

RATIONALE

This subject caters to the need of technician engaged in the investigation, planning, construction & maintenance of railway, bridges and tunnels. In Practical field each component of transportation is a specialized branch of engineering. This subject aims at basic knowledge about railway, bridges, and tunnels in respect of their various types, materials used, functions of component parts, methods of construction, planning principles, aspects of supervision and maintenance.

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **404 ,** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **TRANSPORTAION ENGG.-I** PAPER CODE: **6179**

SCHEME OF STUDIES AND SPECIFICATION TABLE

Lectures: **4** Hrs. per week
Practical:**2** Hrs. per week

S. No.	Topics	SCHEME OF STUDIES		
		Theory Hrs	Practical Hrs	Total Hrs
1	Overview of Transportation Engineering	08	--	08
2	Railway Engineering	14	8	22
3	Ideal requirement, component parts	18	10	28
4	Bridge Engineering	12	08	20
5	Tunnel Engineering	08	04	12
	Total	**60**	**30**	**90**

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **404 ,** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **TRANSPORTAION ENGG.-I** PAPER CODE: **6179**

CONTENTS

Lectures: **4** Hrs. per week
Practical:**2** Hrs. per week

S no	Course content	Hours of study
1	**OVERVIEW OF TRANSPORTATION ENGINEERING :** Role of transportation in the development of nation. Modes of transportation system – roads, railway, airways, waterways, Importance of each mode, comparison and their relative merits and demerits. Necessity & importance of Cross drainage works for roads & railways.	**08**
2	**RAILWAY ENGINEERING :** Alignment and Gauges, Classification of Indian Railways, zones of Indian Railway. Alignment- Factors governing rail alignment. Rail Gauges – types, factors affecting selection of gauge. Rail track cross sections – standard cross section of BG & M.G Single & double line in cutting and embankment. Permanent ways.	**14**
3	**IDEAL REQUIREMENT, COMPONENT PARTS :** *Rails* – function & its types. *Rail Joints* – requirements, types, *Creep of rail* - causes & prevention of creep. *Sleepers* – functions & Requirement, types – wooden, metal, concrete sleepers & their suitability, sleeper density. *Ballast* – function & different types with their properties, relative merits & demerits. *Rail fixtures & fastenings* – fish plate, bearing plates, spikes, bolts, keys, anchors & anti creepers. Railway Track Geometrics. Coning of wheels, tilting of rails, Gradient & its types, Super elevation, limits of Super elevation on curves, Cant deficiency, negative cant, grade compensation on curves. Branching of Tracks. Definition of point & crossing, a simple split switch turnout consisting of points and crossing lines. Sketch showing different components, their functions & working. Line sketches of track junctions-crossovers, scissor cross over, diamond crossing, triangle. Inspection of points and crossings. *Station and Yards* : Site selection for railway stations, Requirements of railway station, Types of stations (way side, crossing, junction & terminal) Station yards , types of station yard, Passenger yards, Goods yard Locomotive yard, its requirements, water column , Marshalling	**18**

	yard, its types. *Track Maintenance* - Necessity, types, Tools required and their function, organization, duties of permanent way inspector, gang mate, key man	
4	**BRIDGE ENGINEERING :** Site selection and investigation Factors affecting selection of site of a bridge. Bridge alignment Collection of design data Classification of bridges according to function, material, span, size, alignment, position of HFL. Component parts of bridge. Plan & sectional elevation of bridge showing component parts of substructure & super structure. Different terminology such as effective span, clear span, economical span, waterway, afflux, scour, HFL, freeboard, etc. *Foundation* – function, types Piers-function, requirements, types. *Abutment* – function, types, *Wing walls* – functions and types. *Bearing* – functions, types of bearing for RCC & steel bridges. *Approaches* – in cutting and embankment. *Bridge flooring*- open and solid floors. *Permanent and Temporary Bridges*- Permanent Bridges - Sketches & description in brief of culverts, causeways, masonry, arch, steel, movable steel bridges, RCC girder bridge, pre-stressed girder bridge, cantilever, suspension bridge. Temporary Bridges- timber, flying, floating bridges *Inspection & Maintenance Of Bridge* - Inspection of bridges, Maintenance of bridges & types, routine & special maintenance.	**12**
5	**TUNNEL ENGINEERING :** Definition, necessity, advantages, disadvantages. Classification of tunnels. Shape and Size of tunnels. Tunnel Cross sections for highway and railways. *Tunnel investigations and surveying* –Tunnel surveying locating center line on ground, transferring center line inside the tunnel. *Shaft* - its purpose & construction. *Methods of tunneling in Soft rock* - needle beam method, fore-poling method. line plate method, shield method. *Methods of tunnelling in Hard rock* – Full face heading method, Heading and bench method, drift method. Precautions in construction of tunnels. *Drilling equipments*-drills and drills carrying equipments. Types of explosives used in tunnelling. Tunnel lining and ventilation.	**08**
	TOTAL	**60**

TRANSPORTATION ENGINEERING - I

COURSE CODE : 404

PRACTICALS : 2 hrs per week **TOTAL HOURS : 30**

Visits & Report Generation :Student will have to prepare at least 08 reports on visits to different maintenance and operations related to railway tracks during visits. The write-ups for the reports should include following information :

(i) Objects of maintenance operations.

(ii) Materials required.

(iii) Tools and Equipments needed.

(iv) Maintenance procedure.

(v) Precautions to be taken during maintenance operations.

(vi) Remedial measures and quality control to reduce the maintenance requirements.

TOPICS FOR VISITS & REPORTS

1. Through packing
2. Shovel packing
3. Track maintenance
4. Systematic overhauling
5. Lifting of track
6. Lowering of track
7. Counteraction, measurement and adjustment of creep
8. Organization, Tools and equipments for maintenance.
9. Maintenance of points and crossings
10. Maintenance of level crossing.
11. Maintenance of proper Drainage
12. Maintenance of gauge
13. Maintenance of track components.
14. Welding of Rails.
15. Visit to a nearby bridge site where the construction is in Progress
16. Visit for cross drainage works for roadways and railways

Other items may be suggested by Teacher/guide.

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL
DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **404 ,** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **TRANSPORTAION ENGG.-I** PAPER CODE: **6179**

LIST OF REFERENCE BOOKS

Lectures: **4** Hrs. per week
Practical:**2** Hrs. per week

S. No.	Title	Author	Publisher
1	Railway Engineering,	S.C. Saxena	Dhanpatrai & sons
2.	Railway Track	K.R. Antia,	The New Book Co. Pvt. Ltd Mumbai
3	Principles of Railway Engineering	S.C. Rangwala,	Charotar Publication.
4	Principles and Practice of Bridge Engineering,	S.P. Bindra	Dhanpatrai & sons.
5	A Text Book of Transportation Engineering	N.L.Arora and S.P.Luthra,	IPH New Delhi.
6	Elements of Bridge Engineering	J.S. Alagia	Charotar Publication.
7	Bridge Engineering	D.R. Phatak,	Everest Publisher
8	Elements of Bridges,	D. Johnos Victer,	Oxford & IBH Publishing co.
9	Road, Railway and Bridges,	Birdi & Ahuja.	Std. Book House.
9	Tunnel Engineering,	S.C. Saxena,	Dhanpatrai & sons.
10	Explosive Engineering,	C. B. Navalkar, -	
11	IS / International Codes. :	IS 4880, I.S. 5878, Part-I to X.	

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA

BHOPAL

DIPLOMA IN CIVIL ENGINEERING

SEMESTER	**FOURTH SEMESTER**
SCHEME	JULY-08
COURSE CODE	411
NAMEOF THE COURSE(SUBJECT)	**ENTREPRENEURSHIP**
OLD PAPER CODE	0271
NEW PAPER CODE	6046
COMMON WITH PROGRAMME	**M/E/ / /RAC/CTM/AUTO/ SC./ ETE/ /PRINT**
BRANCH	C03,
LECTURE HRS. PER WEEK	TH. 06 PR. 00
LECTURE HRS. PER SEMESTER	TH.90 PR. 00

RATIONALE

Since long entrepreneurship has been recognized as an essential ingredient of economic development . Concept of entrepreneurship has varied from time to time to suit the changing ethos of socio-economic reality. It was applied to business for the first time in 18^{th} century, to designate a dealer who buys and sells goods at uncertain prices. Later on an entrepreneur was considered a dynamic agent of change, or the catalyst who transformed increasingly physical, natural and human resources, into corresponding production possibilities. In recent years, managerial aspects of entrepreneurship are being emphasized. It employs innovativeness, an urge to take risk in the face of uncertainties, and intuition, i.e. a capacity of seeing things in a way which afterwards proves to be true.

The course is kept in soft core under DCS, DME and DEE/ Videography/ Arch/CDDM/ Garment/ MOM/ Prod/ RAC/ MOM/CTM/ Auto/ Comp/ ETE/ IT/ Opto/ Print/ Texttile technology to bring to surface certain common characteristics such as perception of economic opportunity, technical and organizational skills, managerial competence, and motivation to achieve result.

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **411 ,** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **ENTERPRENEURSHIP** PAPER CODE: **6046**

SCHEME OF STUDIES AND SPECIFICATION TABLE

Lectures:6 Hrs. per week

S. No.	Topics	SCHEME OF STUDIES		
		Theory Hrs	Practical Hrs	Total Hrs
1	Introduction To Entrepreneurship	**10**	**-**	**10**
2	Industries And Business Organization	**12**	**-**	**12**
3	Institutional Assistance	**12**	**-**	**12**
4	Incentives/ Concession/ Facilities Available To SSI Entrepreneur	**12**	**-**	**12**
5	Planning Of Industrial Unit	**20**	**-**	**20**
6	Achieve Motivation	**12**	**-**	**12**
7	Financial Management Of An Industrial Unit (SSI)	**12**	**-**	**12**
	Total	**90**	**-**	**90**

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE 411 **,** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **ENTERPRENEURSHIP** PAPER CODE: **6046**

CONTENTS

Lectures:6 Hrs. per week

S no	Course content	Hours of study
1	INTRODUCTION TO ENTERPRENEURSHIP • Definition of Entrepreneur / Entrepreneur • Difference between Entrepreneurship / Entrepreneurship • Need for Entrepreneurship • qualities of successful entrepreneur • Myths about Entrepreneurship • Classification of entrepreneurs on the basis of different criteria • Reasons for the failure of entrepreneurs	**10**
2	INDUSTRIES AND BUSINESS ORGANIZATIONS • Concept of Industry or Enterprise • Classification of Industries (a) On the basis of capital investment - Tiny (Micro) Industry - Small Scale - Medium Scale - Large Scale (b) Others - Rural Industry - Cottage Industry (c) Forms of Business Organization - Proprietorship - Board & Co-operative - Partnership - Public Ltd. - Private Ltd. - IT Sector - Government Co-operative / Undertakings (d) Tiny small scale Industry - Definition - Its significance in National Development. - Govt. policies for SSI promotions	**12**

	- Sector / Product for SSI.	
3	INSTITUTIONAL ASSISTANCE (a) Types of Institutional assistance - Infra - structural assistance - Technical Assistance - Financial assistance - Marketing Assistance (b) Information / guidance & Training - SISI - ASK - MPCON - CSIR - CED- MA - NRDC (c) Infrastructure - D/C - AVN/AKVN (e) Finance - SIDBI - KVIB MPFC - NABARD - MPWDC NSIC M.P.A.V.V.N. (d) Marketing - MP- AGRO - NSIC - PM.LUN - EXPORT COPPORATION - KVIP - MPHSVN MPLDC (e) Quality Control - BIS - FPO - MPLUN F.D.A. - AG. MKT. Board	**12**
4	INCENTIVES / CONCESSION / FACITLITIES AVAILABLE • Seed money • Incentive / subsidies • Others (Phones, Lands etc)	**12**
5	PLANNING OF AN INDUSTRIAL UNIT (SSI) • Pre- Planning Stage - Scanning the environment - Market survey - Seeking information - product / project selection • Implementation Stage - PPR Preparation - DIC registration - Arrangement of Land	**20**

	- Arrangement of Power - Obtaining NOC / Licenses from various departments - DPR Preparation - Seeking financial assistance - Commercial Production • Post Implementation stage - Permanent registration from D.I.C. - Availing Subsidies - Diversification / Modification - Setting up of marketing channel / Distribution.	
6	ACHIVEMENT MOTIVATION • Historical perspective • Concept of achievement motivation • Significance of achievement motivation • Development of achievement motivation	**12**
7	FINANCIAL MANAGEMENT OF AN INDUSTRIAL UNIT (SSI) • Tools of financial analysis • Ratio analysis • Fund Flow / Cash flow analysis • Working capital and concepts • Financial accounting	**12**
	TOTAL	**90**

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE:411 **,** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **ENTERPRENEURSHIP** PAPER CODE: **6046**

PROJECT WORK/ASSIGNMENT

Lectures:6 Hrs. per week

1. To prepare chart to showing various factors affecting entrepreneurship.
2. To collect details related to various schemes run by the Govt. for Self-Employment and Entrepreneurship.
3. To identify and select a project and conduct Market-Survey thereof.
4. To collect various formats used in industries & departments/institutions working in the field of entrepreneurship.
5. Visit few small scale industries situated in city, nearby industrial area.
6. Discuss the problems related to SSI (Small Scale Industries) with an entrepreneur.
7. Collect information about market rates quality and quantity of goods for their choice.
8. Develop logical and analytical approach to purchase the raw material / finished goods.
9. To prepare case study of successful entrepreneurs.
10. Preparation of Project report for the industry/ Business they are willing to start.

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **411 ,** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **ENTERPRENEURSHIP** PAPER CODE: **6046**

LIST OF REFERENCE BOOKS

Lectures: Hrs. per week

S. No.	Title	Author	Publisher
1	Entreprenerial Development Vol. I,II,III	By Vasant desai	Himalaya Publicaton
2	CEDMAP	(Center of Entrepreneurial development Madhya Pradesh)	
3.	Udyamita Vikas		By Anand Prakashan

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA
BHOPAL
DIPLOMA IN CIVIL ENGINEERING

SEMESTER	**FOURTH SEMESTER**
SCHEME	JULY-08
COURSE CODE	412
NAMEOF THE COURSE(SUBJECT)	**MARKETING MANAGEMENT**
OLD PAPER CODE	0269
NEW PAPER CODE	5181
COMMON WITH PROGRAMME	ME /CTM/TEX TECH/MOM
BRANCH	C03,
LECTURE HRS. PER WEEK	TH. 06PR. 00
LECTURE HRS. PER SEMESTER	TH90 PR. 00

RATIONALE

In the Era of Globalization and Liberalization, this course of Marketing Management is of utmost important to the entrepreneur, industrialist and people working in the field of Marketing and related work.

This course specially designed to help the students in widening their knowledge and understanding of the current market trends and also helpful to start their career in their respective fields along with the knowledge of marketing.

To produce something is not very difficult but to make people come forward to buy it is very difficult task. This statement shows the importance and need of this course in the present scenario.

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE412 **,** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **MARKETING MANAGMENT** PAPER CODE: **5181**

SCHEME OF STUDIES AND SPECIFICATION TABLE

Lectures: **6** Hrs. per week

S. No.	Topics	SCHEME OF STUDIES		
		Theory Hrs	Practical Hrs	Total Hrs
1	Marketing And Concept	08	-	08
2	Marketing Environment	06	-	06
3	Marketing Planning And Organization	08	-	08
4	Market Segmentation	06	-	06
5	Marketing Mix			
	A. Product Management	08	-	08
	B. Place Management	08	-	08
	C. Price Management	08	-	08
	D. Promotion Management	08	-	08
6	Understanding Consumers	06	-	06
7	Marketing Research And Sales Forecasting	10	-	10
8	Sales Management	08	-	08
	TOTAL	**90**	**-**	**90**

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **412 ,** COMMON WITH PROGRAMME CTM (Exam Code 840)

NAME OF COURSE: - **MARKETING MANAGMENT** PAPER CODE: **5181**

CONTENTS

Lectures: **6** Hrs. per week

S no	Course content	Hours of study
01	**1. MARKETING & CONCEPT** 1.1 Evolution of marketing-a historical background 1.1.1 The stage of barter 1.1.2 The stage of money economy 1.1.3 The stage of industrial revolution 1.1.4 The stage of competition 1.1.5 The emergence of marketing 1.2 Selected definitions of marketing 1.3 Different concept of marketing 1.3.1 The exchange concept 1.3.2 The production concept 1.3.3 The product concept 1.3.4 The sales concept 1.3.5 The marketing concept 1.4 Difference between selling & marketing 1.5 Benefits & significance of marketing 1.5.1 Helps to remove causes for under development 1.5.2 Improve productivity & efficiency 1.5.3 Canalize country's economic resources properly 1.5.4 Insure better deal for consumer 1.5.5 Make economic planning meaningful & relevant etc	
02	**MARKETING ENVIRONMENT** 2.1 Internal & external factors 2.1.1 Demographic environment 2.1.2 Economic environment 2.1.3 Political environment 2.1.4 Physical environment 2.1.5 Technological environment	

	2.1.6 Competitive environment 2.1.7 Social & cultural environment 2.2 Micro & macro environment	
03	**MARKETING PLANNING & ORGANIZATION** 3.1 Scope & importance of planning 3.2 Steps in marketing planning process 3.3 Purpose & principle of organization 3.4 Models of marketing organization 3.4.1 Line & staff type 3.4.2 Product based organization 3.4.3 Territory oriented organization 3.4.4 Complex organization 3.5 Task of chief marketing executive 3.6 Decentralization	
04	**MARKET SEGMENTATION** 4.1 Types of market 4.2 Definitions & benefits of segmentation 4.3 Method s of segmentation 4.3.1 Geographic segmentation 4.3.2 Demographic segmentation 4.3.3 Psychographic segmentation 4.3.4 Buyer behavior Segmentation 4.3.5 Volume segmentation 4.4 Steps in market segmentation 4.5 Market targeting	
05	**MARKET MIX** 5.1 Definition of market mix 5.2 Elements of marketing mix (4 P'S)-Product, Place, Price, Promotion 5.3 Environmental variable (uncontrollable variables) 5.3.1 Customer variable 5.3.2 Competition variable 5.3.3 Trade variable 5.3.4 Environmental variable 5.4 Product management 5.4.1 Components of product • The core or basic constituent • The associated features • The brand names, package,label 5.4.2 Types of product • The generic product • The branded product • The differentiated product • The customized product • The augmented & potential product	

		5.4.3 The product line & product mix 5.5 New product development (NPD) 5.5.1 Significance & classification of new product 5.5.2 Stages in NPD 5.5.3 Estimating the demand for new product 5.5.4 Test marketing 5.6 Product life cycle (PLC) 5.6.1 Concepts & benefits of PLC 5.6.2 Different stages in PLC 5.6.3 Strategies used in different stages 5.7 Place management 5.7.1 Physical distribution • Definitions & importance of physical distribution • Designing the physical distribution system 5.7.2 The distribution channel • The role & importance of distribution channel • Planning & designing of distribution channel • Types of distribution intermediaries 5.8 Price management 5.8.1 The meaning & importance of pricing 5.8.2 Objectives of pricing 5.8.3 Factors affecting pricing –Internal & external 5.8.4 Pricing methods • Cost based pricing • Break even pricing • Demand based pricing • Competition based pricing • Product line pricing • Tender pricing • Affordability pricing • Differentiated pricing 5.8.5 Pricing policies & setting the price 5.9 Promotion management 5.9.1 Sales promotion • Importance & objectives of sales promotion • Tools &techniques of sales promotion	

	5.9.2 Advertising • Role & importance of advertising • Types of advertising • Deciding on the advertising budget • Evaluating advertising effectiveness 5.9.3 Difference between sales promotion & advertising	
06	**UNDERSTANDING CONSUMER** 6.1 Factor influencing buyer behavior • Information from variety of sources • Socio-cultural environment of buyer • Group influence • Religion & language • Concern about status 6.2 Buying motives –Product & patronage motive 6.3 Buying habits – Convenience, shopping and spatiality goods	
07	**MARKETING RESEARCH & SALES FORECASTING** 7.1 Definition & importance of marketing research 7.2 Steps in marketing research • Defining problem • Problem analysis • Developing research design • Developing research procedure • Data collection –Primary & secondary • Analyzing & interpretation • Summarizing & preparing the research report 7.3 Method of market research 7.4 Necessity & purpose of sales forecasting 7.5 Methods of sales forecasting	
08	**SALES MANAGEMENT** 8.1 Designing the sales force 8.2 Managing the sales force • Recruitment & selection • Training, compensation, control • Supervision & direction • Motivation of salesman 8.3 Fixing sales quota 8.4 Duties & responsibilities of sales manager	
	TOTAL	**90**

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **412,** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **MARKETING MANAGMENT** PAPER CODE: **5181**

LIST OF REFERENCE BOOKS

Lectures **6** Hrs. per week

S. No.	Title	Author	Publisher
1	Marketing management - Analysis, Planning & Control	Philip Kotler	
2	Principles & practice of Marketing in India	C.B.Memoria & R.L.Joshi	
3	Contemporary Marketing	Louis & Bone & David L. Kurtz	
4	Essential of Management	Koontz	
5	Marketing management	S.A. Sherlekar	

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA
BHOPAL
DIPLOMA IN CIVIL ENGINEERING

SEMESTER	**FOURTH SEMESTER**
SCHEME	JULY-08
COURSE CODE	406
NAMEOF THE COURSE(SUBJECT)	**COMPUTER AIDED DRAWING**
OLD PAPER CODE	
NEW PAPER CODE	
COMMON WITH PROGRAMME	CTM (Exam Code 840)
BRANCH	C03,
LECTURE HRS. PER WEEK	TH. 00 PR. 03
LECTURE HRS. PER SEMESTER	TH. 00 PR. 45

RATIONALE

It is the age of computer. Architect / Engineers prepares most accurate and descent presentation of plans to satisfy the clients. Use of computer software such as AutoCAD, Felix Cad, Auto Civil enables Civil Engineers to prepare quality drawings in shortest possible time. This helps in reduction in the laborious, tedious work of draftsmanship. Working drawings are also prepared with the help of computer. In view of this computer aided drawing has been included in the present curriculum.

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **406** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **COMPUTER AIDED DRAWING**

SCHEME OF STUDIES AND SPECIFICATION TABLE

Practical:**3** Hrs. per week

S. No.	Topics	SCHEME OF STUDIES			Suggested distribution of marks for theory paper
		Theory Hrs	Practical Hrs	Total Hrs	
1	CAD Software	--	06	06	--
2	CAD Commands	--	24	24	--
3	Submission / Working Drawing	-	15	15	-
	Total	--	**45**	**45**	--

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **406** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **COMPUTER AIDED DRAWING**

CONTENTS

Practical:**3** Hrs. per week

S no	Course content	Hours of study
1	**CAD SOFTWARE :** Meaning, various CAD software available in the market AutoCAD, Felix Cad, Auto Civil, 3D Max ; etc.)Starting up of CAD, CAD Window, Tool bar, Drop down menu, Command window, Saving the drawing. Introduction of Graphic screen.	
2	**CAD COMMANDS :** WCS icon, UCS icon, co-ordinates, drawing limits, grid, snap, ortho features. Drawing commands, line, circle, polyline, multiline, ellipse, polygon etc. Editing commands – Copy, move, offset, fillet, chamfer, trim, lengthen, mirror, rotate, array etc. Working with hatches, fills, dimensioning, text etc.	
3	**SUBMISSION / WORKING DRAWING :** Generation of line plan, Detailed Plan, elevation, section, site plan, Area statement, Generation of 3D view and print commands, Introduction to Auto Civil , 3D Max. **Note: Above theoretical aspects should be covered in the practical periods.**	

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **406** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **COMPUTER AIDED DRAWING**

PRACTICALS

Practical:3 Hrs. per week

S no	Course content	Hours of study
1	**A: Building Drawing** : Following exercises shall be completed with CAD software and Print of all the drawings should be prepared on A3 / A4 size paper : 1) Preparation of line plan of a residential building. 2) Preparation of line plan of a Public building. 3) Preparation of detailed plan of a small residential building 4) Preparation of submission drawing of residential building – showing Plan, Elevation, Section, Schedule of openings, Site Plan and Area Statement.	**15**
2	**B: Civil Engineering Drawing** : Preparation of Drawings with CAD software for the following exercises (Any *Three*) and Print of all the drawings should be prepared on A3 /A4 size paper. 1) Plan, Cross Section and Longitudinal section of a Culvert (Pipe culvert/Box Culvert). 2) Section of an Earthen Dam. 3) Plan and Section of K. T. Weir. 4) Cross Section of Retaining wall. 5) Bonds in brickwork – Plan and Elevation for English bond and Flemish bond for one brick thick wall. 6) Cross Section of ESR (Over Head Tank). 7) Cross Section of Clarri - flocculator	**30**
	Total	**45**

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RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA
BHOPAL
DIPLOMA IN CIVIL ENGINEERING

SEMESTER	**FOURTH SEMESTER**
SCHEME	JULY-08
COURSE CODE	407
NAMEOF THE COURSE(SUBJECT)	**PROFESSIONAL ACTIVITIES - IV**
OLD PAPER CODE	NIL
NEW PAPER CODE	
COMMON WITH PROGRAMME	CTM (Exam Code 840)
BRANCH	C03,
LECTURE HRS. PER WEEK	02
LECTURE HRS. PER SEMESTER	30

RATIONALE:

In today's competitive world, the nature of organizations is changing at very rapid speed. In this situation the responsibility of diploma holder is not unique. He will be a part of a team in the organization. As such the individual skills are not sufficient to work at his best. This subject will develop the student as an effective member of the team. It will develop the abilities and skills to perform at highest degree of quality as an individual as well as a member of core group or team. Such skills will enhance his capabilities in the field of searching, assimilating information, managing the given task, handling people effectively, solving challenging problems.

This subject is classified under humanity science.

OBJECTIVES:

THE STUDENTS WILL BE ABLE TO:

1. Developing working in teams
2. Apply problem solving skills for a given situation
3. Use effective presentation techniques
4. Apply techniques of effective time management
5. Apply task management techniques for given projects
6. Enhance leadership traits
7. Resolve conflict by appropriate method
8. Survive self in today's competitive world
9. Face interview without fear
10. Follow moral and ethics
11. Convince people to avoid frustration

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **407** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **PROFESSIONAL ACTIVITIES -IV**

CONTENTS

Lectures: **2** Hrs. per week

Topic No	Contents	Hours
1	SOCIAL SKILLS : Society, Social Structure, Develop Sympathy And Empathy	**01**
2	SWOT ANALYSIS : Concept , How to make use of SWOT	**01**
3	INTER PERSONAL RELATION : Sources of conflict, Resolution of conflict , Ways to enhance interpersonal relations.	**02**
4	PROBLEM SOLVING : I)Steps In Problem Solving, 1)Identify And Clarify The Problem, 2)Information Gathering Related To Problem, 3)Evaluate The Evidence, 4)Consider Alternative Solutions And Their Implications, 5)Choose And Implement The Best Alternative, 6)Review II)Problem Solving Technique.(Any One Technique May Be Considered) 1) Trial And Error 2) Brain Storming 3) Lateral Thinking	**02**
5	PRESENTATION SKILLS : *Body language* - Dress like the audience Posture, Gestures, Eye contact and facial expression. *Presentation Skill* – Stage Fright *Voice and language* – Volume, Pitch, Inflection, Speed, Pause, Pronunciation, Articulation, Language, Practice of speech. *Use of aids* –OHP,LCD projector, white board	**03**
6	INDUSTRIAL/FIELD VISITS : (Any two) Structured industrial visits be arranged and report of the same should be submitted by the individual student, to form a part of the term work. industrial visits may be arranged in the following areas: i) Organizations involved in Civil Construction for observing various Construction processes.	**05**

	ii) Construction Material testing laboratories in industries or reputed organizations. iii) Brick /concrete fencing pole Manufacturing. iv) visit to nearest railway station and study of various civil engineering components i.e. Foot bridge, platform construction, Shade, public utilities, yards, etc.	
7	LECTURES BY PROFESSIONAL / INDUSTRIAL EXPERT : To be organized from *Any Three* of the following areas **:** i) Use of a ready mix concrete in construction. ii) Specific civil Engineering applications. iii)Use of lifts and escalators in high rise buildings. iv)Building bylaws for municipal area. v) Computer aided drafting. vi)New Building materials.(PVC sanitary fittings, Aluminum wall paneling, colored glass, water proofing compounds) vii)Composite Materials. viii)Ceramics ix) GPS/GIS x)Safety Engineering and Waste elimination	**05**
8	**INDIVIDUAL ASSIGNMENTS :** *Any two* from the list suggested - a) Process sequence of building constrction. b) Write material specifications for any two construction material. c)Layout of three room simple building. d)Preparing models using development of surfaces. e) Assignments on bending moment , sheer forces , deflection of beams and torsion chapters of strength of material. f) Select different materials with specifications for at least 10 different civil engineering material components and list the important desirable properties of the material. g) Select 5 different structural steels and alloy steels used in civil engineering constructions. h) List the various properties and applications of following materials – a. Ceramics, b. fiber reinforcement plastics, c. thermo plastics, d. thermo setting plastics, e. rubbers, f. tar steel g. TMT. *OR* Conduct *Any One* of the following activities through active participation of students and write report i) Rally for energy conservation / tree plantation. ii) Survey for local social problems such as mal nutrition, unemployment, cleanliness, illiteracy etc. iii) Conduct aptitude , general knowledge test , IQ test.	**05**

	iv) Arrange **any one** training in the following areas : a) Yoga. B) Use of fire fighting equipment and First aid Maintenance of Domestic appliances.	
9	**GROUP DISCUSSION AND INTERVIEW TECHNIQUE :** Introduction to group discussion, Ways to carry out group discussion, *Parameters*— Contact, body language, analytical and logical thinking, decision making. The students should discuss in a group of six to eight students and write a brief report on the same as a part of term work. Two topics for group discussions may be selected by the faculty members. Some of the suggested topics are - i) Sports ii) Current news items iii) Discipline and House Keeping iv) Current topics related to mechanical engineering field. INTERVIEW TECHNIQUE: Necessity, Tips For Handling Common Questions	**02**
10	**WORKING IN TEAMS :** Understand And Work Within The Dynamics Of A Groups. Tips To Work Effectively In Teams, Establish Good Rapport, Interest With Others And Work Effectively With Them To Meet Common Objectives, Tips To Provide And Accept Feedback In A Constructive And Considerate Way, Leadership In Teams, Handling Frustrations In Group.	**02**
11	**TASK MANAGEMENT :** Introduction, Task Identification, Task Planning, Organizing And Execution, Closing The Task	**02**
	TOTAL	**30**

PROFESSIONAL ACTIVITIES – IV

COURSE CODE. 407

CONTENTS:

Assignment: (Any Eight Assignment)

1) SWOT analysis:- Analyse yourself with respect to your strength and weaknesses, opportunities and threats. Following points will be useful for doing SWOT.
   a) Your past experiences,
   b) Achievements,
   c) Failures,
   d) Feedback from others etc.
2) Undergo a test on reading skill/memory skill administered by your teacher.
3) Solve the puzzles.
4) Form a group of 5-10 students and do a work for social cause e.g. tree plantation, blood donation, environment protection, camps on awareness like importance of cleanliness in slump area, social activities like giving cloths to poor etc.(One activity per group)
5) Deliver a seminar for 10-12 minutes using presentation aids on the topic given by your teacher.
6) Watch/listen an informative session on social activities. Make a report on topic of your interest using audio/visual aids. Make a report on the programme.
7) Conduct an interview of a personality and write a report on it.
8) Discuss a topic in a group and prepare minutes of discussion. Write thorough description of the topic discussed.
9) Arrange an exhibition, displaying flow-charts, posters, paper cutting, photographs etc on the topic given by your teacher.

Note: - Please note that these are the suggested assignments on given contents/topic. These assignments are the guide lines to the subject teachers. However the subject teachers are free to design any assignment relevant to the topic. The **term work** will consist of any eight assignments.

Mini project on task management. Decide any task to be completed in a stipulated time with the help of teacher. Write a report considering various steps in task management.

RAJIV GANDHI PRODYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN CIVIL ENGG.

SEMESTER: **FOURTH** SCHEME: **Dip. CIVIL ENGG JULY 2008**
COURSE CODE: **407** COMMON WITH PROGRAMME CTM
(Exam Code 840)

NAME OF COURSE: - **PROFESSIONAL ACTIVITIES -IV**

LIST OF REFERENCE BOOKS

Lectures: **2** Hrs. per week

Sr. No	Title of the book	Author	Publisher
1	Time management	Marshall Cooks Adams	Viva Books
2	Basic Managerial Skills for All	E.H. Mc Grath , S.J.	Pretice Hall of India, Pvt Ltd
3	Body Language	Allen Pease	Sudha Publications Pvt. Ltd.
4	Creativity and problem solving	Lowe and Phil	Kogan Page (I) P Ltd
5	Decision making & Problem Solving	by Adair, J	Orient Longman
6	Develop Your Assertiveness	Bishop , Sue	Kogan Page India
7	Make Every Minute Count	Marion E Haynes	Kogan page India
8	Organizational Behavior	Steven L McShane and Mary Ann Glinow	Tata McGraw Hill
9	Organizational Behavior	Stephen P. Robbins	Pretice Hall of India, Pvt Ltd
10	Presentation Skills	Michael Hatton	(Canada – India Project) ISTE New Delhi
11	Stress Management Through Yoga and Meditation		Sterling Publisher Pvt Ltd
12	Target setting and Goal Achievement	Richard Hale ,Peter Whilom	Kogan page India
13	Time management	Chakravarty, Ajanta	Rupa and Company
14	Working in Teams	Harding ham	A Orient Longman

PROFESSIONAL ACTIVITIES – IV

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INTERNET ASSISTANCE

1. http://www.mindtools.com
2. http://www.stress.org
3. http://www.ethics.com
4. http://www.coopcomm.org/workbook.htm
5. http://www.mapfornonprofits.org/
6. http://www.learningmeditition.com http://bbc.co.uk/learning/courses/
7. http://eqi.org/
8. http://www.abacon.com/commstudies/interpersonal/indisclosure.html
9. http://www.mapnp.org/library/ethics/ethxgde.htm
10. http://www.mapnp.org/library/grp_cnfl/grp_cnfl.htm
11. http://members.aol.com/nonverbal2/diction1.htm
12. http://www.thomasarmstron.com/multiple_intelligences.htm
13. http://snow.utoronto.ca/Learn2/modules.html
14. http://www.quickmba.com/strategy/swot/