MAHARSHI DAYANAND UNIVERSITY, ROHTAK

SCHEME OF STUDIES & EXAMINATIONS

B. Tech. 4ᵗʰ YEAR CIVIL ENGINEERING, SEMESTER- VII

(Scheme-F)

EFFECTIVE FROM THE SESSION 2012-13

Subject Code	Subject Name	Teaching schedule				Marks For class work	Marks for Examination		Total Marks	Duration of Exam
		L	T	P	Total		Theory	Practical		
CE-401-F	Design of Steel Structure-II	3	1	-	4	50	100	-	150	3
CE-403-F	Disaster Mitigation and Management	3	1	-	4	50	100	-	150	4
CE-405-F	Estimating and Costing	3	1	-	4	50	100	-	150	3
CE-407-F	Irrigation Engg-II	3	1	-	4	50	100	-	150	3
----------	Elective	3	1	-	4	50	100	-	150	3
CE-451-F	Hydro Power Engg.	3	1	-	4	50	100	-	150	3
CE-453-F	Ground Water Engg	3	1	0	4	50	100	0	150	3
CE-455-F	Irrigation Drawing Lab	0	0	2	2	50	0	50	100	3
CE-457-F	Practical Training - II	-	-	2	-	-	-	-	-	-
GFCE-459-F	General Fitness for the Profession	-	-	-	-	-	-	50	50	3
	Total	21	7	4	32	400	700	100	1200	

Note:

1. **Students will be allowed to use non-programmable scientific calculator. However, sharing of calculator will not be permitted in the examination.**
2. **Student will be permitted to opt for any one elective run by the department. However, the departments will offer only those electives for which they have expertise. The choice of the students for any elective shall not be a binding for the department to offer, if the department does not have expertise.**
3. **Assessment of Practical Training-II, carried out at the end of VI semester, will be based on seminar, viva-voce and project report of the student. According to performance letter grades A, B, C, F are to be awarded. A student who is awarded 'F' grade is required to repeat Practical Training.**

ELECTIVES

1) CE -409 -F   -   Energy planning and management
2) CE -411-F   -   Environmental pollution and control
3) CE -417- F   -   Finite Element Methods
4) CE- 421 -F   -   Environmental impact and management
5) CE- 423- F   -   Elements of Earth Quake Engg.
6) CE- 433 -F   -   Hydraulic System Modeling

CE-401 F DESIGN OF STEEL STRUCTURES-II

L T P   **Sessional: 50 Marks**

3 1   **Theory   : 100 Marks**

                                                                   Total   : 150 Marks

SECTION A   **Duration of exam: 3 Hrs.**

Unit-I: Elementary Plastic Analysis and Design: Introduction, Scope of plastic analysis, ultimate load carrying capacity of tension members and compression members, flexural members, shape factor, mechanisms, plastic collapse, analysis, plastic analysis applied to steel beams and simple portal frames and design.

SECTION B

Unit-II: Industrial Buildings: Loads, general arrangement and stability, design considerations, design of purlins, design of roof trusses, industrial building frames, bracings and stepped columns.

Unit-III: Design of Water Tanks: Introduction, permissible stresses, design of circular, rectangular and pressed steel tanks including staging.

SECTION C

Unit-IV: Design of Steel Stacks: Introduction, various loads to be considered for the design of steel stacks, design of steel stacks including foundation.

Unit-V: Towers: Transmission line towers, microwave towers, Design loads, classification, design procedure and specification.

SECTION D

Unit-VI: Cold Formed Sections: Introduction and brief description of various type of cold-formed sections, local buckling, concepts of effective width and effective sections, elements with stiffeners, design of compression and bending elements.

Books Recommended:

1.Design of Steel Structures, A.S.Arya & J.L.Ajmani, Nem Chand & Bros., Roorkee.

2.Design of Steel Structures, P.Dayartnam, Wheeler Pub. Allahabad.

3.Design of Steel Structures, Gaylord & Gaylord, McGraw Hill, Newyork/International Students   .

4.IS:800-1984, Indian Standard Code of Practice for General Construction in Steel.

5.IS-801-1975, Indian Standard Code of Practice for Use of cold-formed light gauge steel

   structural members in general building construction.

CE- 405 F Estimating and Costing

L T P   Sessional: 50 Marks

3 1 -   Theory   : 100 Marks

                                                                   Total   : 150 Marks

                                                                   Duration of exam : 3 Hrs.

SECTION A   Estimate:

Principle of estimation ,units ,item work ,different kinds of estimates, different methods of estimation ,estimation of materials in single room building ,two room building , multi storey buildings, with different sections of walls ,foundation ,floors and roofs ,R.B and R.C.C works ,Plastering ,white washing ,Distempering and painting ,doors and windows ,lump sum items ,Estimates of canals , dams ,barrages,Hilly roads etc.

SECTION B   Specification of Works:

Necessity of specification types of specification, general specification, specification of bricks ,cement ,sand ,water, lime, reinforcement: detailed specification for earthwork, cement, concrete ,brickwork, flooring ,D.P.C,R.C.C ,cement plastering ,white and colour washing ,distempering ,painting

SECTION C   Rate analysis

Purpose, importance and requirements of rate analysis, units of measurement preparation of rate analysis , procedure of rate analysis for items: Earth work ,concrete works ,R.C.C works ,reinforce brick work ,plastering ,painting ,finishing (white washing ,distempering)

SECTION D   Public Works Account

Tender and acceptance of tender ,Ernst money ,security money ,retention money ,measurement book ,cash book, preparation ,examination and payment of bills, first and final bills ,administrative sanction ,technical sanction.Billing – maintenance of muster ROLL, preparation of pay bill ,measurement of work for payment of contractors, different types of payment –first &final ,running advance and final payment ,Valuation Purpose of valuation, principles of valuation depreciation ,sinking fund ,salvage &scrapvalue ,valuation of a building –cost method ,rental –return method .

Books

1. Dutta BN –Estimating &costing
2. Chakraborty –Estimate costing &specification in civil engg
3. Kohli &kohli –Atext book on estimating &costing (Civil) with drawings Ambala ramesh Publications.
4. Rangwala SC –Estimating &Costing –Anand Charotar Book Stall

CE-407- F- IRRIGATION ENGINEERING-II- (DESIGN & DRAWING)

L T P   Sessional: 50 Marks

3-1 -0   Exam   : 100 Marks

                                                               Total   : 150Marks

                                                               Duration of exam : 3 Hrs.

Complete design and drawing of the following:

SECTION A

1 Design of weirs and barrages on permeable foundation for surface and sub surface flow

   conditions.

2 Design of Guide Banks.

SECTION B

3 Flood Routing using step by step method.

4 Design of Syphon Aquaduct.

SECTION C

5 Design of Sarda type fall & sloping glacis fall.

6 Seepage line in a homogeneous earth dams on impermeable foundation with horizontal drainage.

SECTION D

7 Design of Ogee Spillway and stilling basin.

8 Design of dams ,aqueducts,symphonic systems & their inlets&outlets ,design of spillways.

Note: Emphasis would be given to the computer aided designs of some of above structures.

BOOKS

1. PunmicBC &PANDE-Irrigation &Water POWER Engineering
2. Sharma .RK –text book of Irrigation Engg &Hydraulics structure
3. Sharma RK-Principles &practices of Irrigation Engg
4. Garg S.K-Irrigation engineering &hydraulics structure –khanna publishers
5. Varshney RS &Gupta –theory &design for Irrigation Structures
6. Swami Sharan –Analysis &Design of substructure .

CE-423 F ELEMENTS OF EARTHQUAKE ENGINEERING

L T P

3 1 -

Sessional: 50 Marks

Theory : 100 Marks

Total   : 150Marks

Duration of exam : 3 Hrs.

SECTION A   Unit-I: Seismology

Introduction, plate tectomics, earthquake distribution and mechanism, seismicity, seismic waves, earthquake magnitude and intensity, seismic zoning and seismometry.

Unit-II: Single Degree of Freedom Systems

Various types of dynamic loads, vibration of single degree of freedom system, Free and forced vibrations, types of damping, critical damping. Transmissibility, vibration measuring instruments, response spectrum.

SECTION B   Unit-III: Multi-degrees of Freedom (MDOF) Systems

Equation of Motion, normal modes and natural frequencies, semi-definite systems, dynamic vibration absorbers, vibration dampers, principle of orthogonally, Stodolas method, Holzer`s method, matrix method, modal analysis and its limitations. Mode super position method.

SECTION C   Unit-IV: Seismic Analysis and Design

General principles, assumptions, seismic coefficient method, response spectrum method, strength and deflection, design criterion for structures, significance of ductility, design and detailing for ductility, codal provisions, design examples.

SECTION D   Unit-V: Seismic Performance, Repair and Strengthening

Methods for assessing seismic performance, influence of design ductility and masonry infills, criterion for repair and strengthening, repair and strengthening techniques and their applications, additions of new structural elements.

Unit-VI: Vibrational Control

General features of structural control, base isolation, active and passive control system. Earthquake resistance design as per I.S: 1893, I.S: 4326 and I.S: 13920.

Books Recommended:

1. Elements of Earthquake Engg, Jai Krishna, A.R.Chandershekaran & Brajesh Chandra, South Asian Pub N.Delhi.

2. Dynamics of Structures, Clough & Penzion, McGraw Hill

3. Earthquake Engineering, Y-X Hu,S-C.Liu and W.Dong, E and FN Sons., Madras.

4. Earthquake Resistant Concrete Structures, George G.Penelis and A.J.Kapoor, E & FN Sons, Madras

CE-409 -F - ENERGY PLANNING AND MANAGEMENT

L T P   Sessional: 50 Marks

3 1 -   Theory   : 100 Marks

                                                           Total   : 150 Marks

                                                           Duration of exam : 3 Hrs.

SECTION A   **Unit-I: Planning**

Energy scenario of the world in general and India in particular with respect to demand, supply and resources, energy requirement and demand forecasting, isolated and integrated planning, concept of national grid, rural energy planning.

Unit-II: Generation

Production of energy from conventional and non conventional sources - Hydel, Thermal, Nuclear, Solar, Tidal, wind, M.H.D., Geothermal, Bioconversion etc. Economic feasibility and cost analysis.

SECTION B   **Unit-III: Ecological & Environmental aspects**

Impact assessment of power plants on environment and ecosystem, Environmental degradation & control strategies, Air population, water population and their control

SECTION C   **Unit-IV: Engineering Aspect**

Load predictions, peak load, base load, load factor, plant factor, capacity factor etc. operation and economics of power stations. Losses in energy generation, transmission and distribution, energy storage and conservation techniques, reliability analysis energy system, energy audit and economics.

SECTION D   **Unit-V: Instrumentation**

Measurement of pressure, flow temperature and humidity, concept of automatic control, power & frequency control, voltage & reactive power control. Microprocessor applications in power systems.

Books Recommended:

1. Energy Planning & Management by D. Sawyer.

CE-421 F ENVIRONMENTAL IMPACT ASSESSMENT AND MANAGEMENT

L T P   Sessional: 50 Marks

3 1 -   Theory : 100 Marks

                                                         Total   : 150 Marks

                                                         Duration of exam : 3 Hrs.

SECTION A

Unit I: Environmental Problems and Issues: Explosion of Environmental issues and scientific,technological and regulatory responses. Effects on ecology, environment, society, health andeconomy. Review of national and international developments related to environmental issues.

Unit II: Review of Remedial Actions: Rural and urban approaches, energy approach, transportation approach, industrial approach, agricultural approach, Technological solutions and Role of technology. Religio- philosophical approaches and concept of Deep ecology. Market basedinstruments including taxation for pollution control; Role of environmental ethics.

SECTION B

Unit III: Environmental Management, Planning and Economics: Multidisciplinary environmental strategies, planning and decision making, human dimensions. Siting of industries and concept of Zoning Atlas, Economic valuation of environmental assets and preliminary concept of Natural Resource Accounting.

SECTION C

Unit IV: Sustainable development: Concept of limits to growth in terms of population, Food, Resources, Capital, Energy, Land Services etc. Their inter linkages and use of Systems approach including feedback loops. Carrying capacity of systems, prerequisites for sustainable development, concepts of sustainable development in the various sectors of economy such as Industry, Agriculture and Infrastructure.

SECTION D

Unit V: Impact Assessment: Collection of baseline data, concept and methodologies for initialenvironmental examination (IEE), Environmental Impact Assessment (EIA),Environmental Impact Statement (EIS), Environmental Audit (EA), Risk Assessment (RA) etc. Case studies for the above.

Books Recommended:

1. Ecology and Environment by P.D.Sharma **2.** Environment Management in India by R.K.Sapru.

   3. Environmental Quality Management by Bindu N.Lohani **4.** Studies in Environment and Development by R.B.Singh. **5.** Environmental Impact Assesment by Larry W.Canter. **6.** Environmental Planning, Policies and Programmes in India by K.D.Saxena.

   7. Concepts in Environmental Impact Analysis by S.K.Shukla & P.R.Shrivastava.

CE-417 F FINITE ELEMENTS METHODS

L T P

3 1 -

Sessional: 50 Marks

Theory   : 100 Marks

Total   : 150 Marks

Duration of exam : 3 Hrs.

SECTION A   Unit-I: General Procedure of Finite Element Methods.

Basic concept of FEM engineering applications. Comparison of FEM with other methods of analysis. Discretization of the domain basic element shapes. Descritization process. Interpolation polynomials. Selection of the order of the interpolation polynomial. Convergence experiments. Linear interpolation polynomial in terms of global and local coordinates. Formulation of elements characteristics matrices and vector's direct approach. Variation approach. Weighted residual approach. Assembly of elements matrices and vectors and derivation of system equation together with their solution.

SECTION B   Unit-II: High Order and Iso-Parametric Element Formulations

Introduction. Higher order one-dimensional element. Higher order elements in terms of natural coordinates and in terms of classical interpolation polynomials. Continuity condition, Numerical integration in one, two and three dimensions.

SECTION C   Unit-III: Solid And Structural Mechanics

Introduction. Basic equation of solid mechanics. Static analysis-formulation of equilibrium equations. Analysis of trusses and frames, analysis of plates, analysis of three dimension problems. Analysis of solids of revolution. Dynamic analysis, dynamic equation of motion. Consistent and lumped mass matrices. Constant mass matrices in global coordinate systems. Dynamic response calculation using FEM.

SECTION D   Unit-IV: Applications and Generalisation of the Finite Element Method

Energy balance and rate equations of heat transfer. Governing differential equation for the heat conduction in three dimensional bodies. Derivation of finite element equation for one dimensional, two dimensional. Unsteady state and radiation heat transfer problems and their solution. Solution of Helmotz's equation and Reynolds equation. Least squares finite element approach.

Books Recommended:

1. The finite element methods in engineering-S.S. Rao, Pub-Pergamon Press
2. Numerical methods in Finite Element Analysis, Klaus-Jurgen Bathe & Edward L Wilson, PHI
3. The Finite Element Methods-O.C. Zienkiewiez, McGraw Hill
4. The Finite Element Methods for Engineers KH Huebner, Wiley, New York

Note: In the semester examination, the examiner will set eight questions in all entire syllabus and students will required to attempt only 5 questions.

The use of scientific calculator will be allowed in the examination. However, programmable calculator and cellular phone will not be allowed.

CE -411 F Environmental pollution and control

L T P   Total   Max. Marks :   150 marks

3 1 -   4   Theory: 100 Marks

                                                   Sessional: 50-Marks

                                                   Duration: 3 Hours

SECTION-A

Principles involved in the protection of public health sanitation of dwelling houses, principles of villages and town planning: land pollution and its control.Economics of environments,eveluations,natural resources.

SECTION-B

Air borne diseases and their control , sources of pollution ,occupational health

Environmental management techniques., sensitive analysis,risk assessment.

Water borne diseases, river pollution and control of water pollution

SECTION-C

Environmental Consideration of ventilation, air conditioning and illumination

Environmental Auditing-general methods, audit process,

SECTION-D

Sample collection and sampling devices: mathematical modeling Application of above in the design of hospital s and other public buildings

Environmental management system standards-

Books:

Environmental management- Vijay Kulkarni-et al.Capital publishing company,N Delhi

Bhatia H.S. Environmental pollution & Control- Galgotia

CE 455 F Irrigation Drawing (lab)

L T P   SESSIONAL-50

O-o-2   TIME DURATION-3 hrs

I Drawing of Aqueducts

2 Earthen Dams and Concrete Dams drawings

3 Drawings of Spillways

4.Out let, inlets drawings

5 Culverts

6HeadRegulartors

7. Drawings of Barrages and Weirs

8 Drawing of fall

CE-433 F HYDRAULICS SYSTEM MODELLING

L T P

3 1 -

Sessional: 50 Marks

Theory : 100 Marks

Total   : 150 Marks

Duration of exam : 3 Hrs.

SECTION A

Unit I: Development of water resources, demand of water, availability of water, estimation of surface water flow at ungaged site.

Drainage System: Types of drainage systems, Urban drainage system, Agriculture drainage system, Roadways drainage system, Airport drainage system, computer applications.

SECTION B

Unit II: Computation of extreme flow: Concept of probability in hydrology, design flood for hydraulic structure, methods of flood frequency analysis, computation of peak flow from precipitation, measurement of peak discharge.

SECTION C

Unit III: Conveyance System: Methods of conveyance of water, resistance equations for flow, design of rigid boundary channels, design of loose boundary channels. Conduit System: Types of pipes, laying of pipes and joints , forces and stresses in pipe band, pipe line analysis and design, methods of supplying water, storage and distribution reservoir, pipe materials, large conduit design. Hydraulic transient analysis.

SECTION D

Unit IV: Water Distribution System Analysis: Types of pipe network, equivalent pipes, pumps in water distribution system, Network with loops, flow equation, node equation loop equation, numerical solution technique – linear theory method, Newton –Ralphson method. Hardy-Cross method, application of water distribution softwares. Water distribution system models.

Books Recommended:

1. Water supply & Sanitary Engg. – V.N.Naziram & S.P.Chandole – Khanna Pub.

2. Hydrology & Hydraulic System –Ram S.Gupta , Printice Hall , New Delhi

3. Fluid Mechanics & Fluid Machinery – S.K.Som & Biswas

CE- 453 -F GROUND WATER ENGINEERING

L T P

3 1 -

Sessional: 50 Marks

Theory   : 100 Marks

Total   : 150 Marks

Duration of exam : 3 Hrs.

SECTION A

Unit I: Properties of Aquifers, Formation constants, compressibility of aquifers, Equation of motion for steady and unsteady ground water flow in isotropic homogeneous aquifers, Dupit`s assumptions. Unconfined flow with a recharge, tile drain problem. Ground water exploration and methods of investigations.

SECTION B

Unit II: Effect of boundaries, interference of water, leaky aquifers, Thiem`s equilibrium formula for unconfined and confined aquifers and determination of hydraulic properties of aquifers. Partial penetration of an aquifer by a well, spherical flow in a well. Non equilibrium formula for aquifer (unsteady radial flows).

SECTION C

Unit III: Tube wells, optimum capacity, silting of tube well, design of tube wells in different aquifers, tube well types, parts, bore hole, strains, its types, well pipe, casing pipe, blind pipe. Construction and working of tube wells, site selection, drilling operation, cable tool method, hydraulic method, rivers Rotary Method and drilling fluids, well screen assembly installation, verticality and alignment of tube wells, gravel packing, development of tube wells, sickness, in construction and corrosion and failure of tube wells, Pumping equipment and hydraulic testing of pumps.

SECTION D

Unit IV: Artificial recharge of ground water, considerations and methods, recharge techniques induced infiltration, water spreading, flooding, basins, ditching, modification of natural channels, irrigation, recharge pits, shafts and recharge wells.

<u>Books Recommended</u>:

1. GroundwaterHydrology, D.K.Todd, John Wiley & Sons Inc.Newyork.

2. Groundwater, H.M.Raghunath, Wiley Eastern Ltd., N.Delhi

CE -403 F DISASTER MITIGATION AND MANAGEMENT

L T P

3 1 -

Sessional: 50 Marks

Theory   : 100 Marks

Total   : 150 Marks

SECTION A

Duration of exam : 3 Hrs.

- ❖ Introduction to disaster Control –integrated approach ,role of engineer

- ❖ Hydrological, coastal and marine disaster

- ❖ Atmospheric Disaster

SECTION B

- ❖ Geological mass movement and land disasters

- ❖ Case studies –Damage profile analysis –uttarkashi/Bhuj/lATUR

- ❖ Disaster mitigation

SECTION C

- ❖ Forest related disasters

- ❖ Wind and water driven disasters

- ❖ Mining disasters

- ❖ Major earthquake &causes

SECTION D

- ❖ Building codes & other recommended practices cyclones &landslides –causes &remedies

- ❖ Theoretical concepts &structural behaviour –seismic response of foundation &soil behaviour ,failure – deformation .

- ❖ Hazard resistant construction –symmetry eccentric loading ,framed structure,soft floors ,simple configurations

Books   IS 4326-1993 code of practice for earth quake resistant construction BIS, IS 13920-1993-Ducticle detailing of reinforced concrete structure Journal of Indian building Congress Vol IV 1997, Seismic design Handbook –Farzad Naeim, Is 1893 -1984-Criteria for earth quake resistant design for structure , IS 13827-1993 Guidelines for improving earthquake structure , Johri etc disaster Mitigation –Experiences & Reflections.

CE-451 F HYDROPOWER ENGINEERING

L T P   Sessional: 50 Marks

3 1 -   Theory   : 100 Marks

                                                     Total   : 150 Marks

                                                     Duration of exam : 3 Hrs.

SECTION-A   UNIT-I

INTRODUCTION-Sources of energy, status of hydropower, thermal vs hydropower, advantages of hydropower, place of hydropower in power system

UNIT-II

Electrical load on hydro power, load curves, load factor, capacity factors, utility factors, diversity factors, load on hydropower stations, load curves, load duration curves, firm power , secondary power , prediction of loads

SECTION-B   UNIT-III

Types of hydropower stations-classification of hydropower stations, run of river plants, general lay out of run of river plants,Vlley dam plans, storage and pondage.Examples

UNIT-IV

Basic features of Hydropower plants-advantages of pumps storage plants, storage plants, types of pump storage plants, reversible turbines, efficiency of pump storage plants. Examples.

SECTION-C   UNIT-V

Water Conveyance System-Classifications of penstocks, design criteria of penstocks, anchor blocks, types of valves, water hammer, surges in power channels,Examples Types of Surge shafts-surge analysis, design of surge shafts.Examples.

SECTION-D   UNIT-VI

TURBINES-Types of turbines,criterian for selection,specifis speed of turbones,unit powr,unit discharge,cavitatin in turbines, design of draft tube. Examples

UNIT-VII

Types of power houses-types of power houses, lay out of power houses, ventilations, under ground power houses, advantages, Examples.

Reference-Water power Engineering by Dandekar and Sharma

Hydropower structures Volume IIi-By R S Varshney

Hydro Power Engineering By Dr Darde P N ,Vayu Education,Delhi

GFCE-459-F   **GENERAL FITNESS FOR THE PROFESSION**

L T P

- - -

Class Work :   -- Marks
Practical :   50 Marks
Total Marks :   50 Marks

At the end of each year students will be evaluated on the basis of their performance in various fields. The evaluation will be made by the panel of experts/examiners/teachers to be appointed by the rincipal/Director of the College. A specimen perform indicating the weight age to each component/ activity is given below :-

Name : _____ College Roll No. _____

Univ.Roll No._____ _____

Branch _____ Year of Admission _____._____

I. Academic Performance (15 Marks) :

(a) Performance in University Examination :-

Sem.	Result	%age of Marks obtained	Number of Attempt in which the Sem. exam. has been cleared
I			
II			
III			
IV			
V			
VI			
VII			

II. Extra Curricular Activities (10 Marks) :

Item	Level of Participation	Remarks (Position Obtained)
Indoor Games (Specify the Games	_____ _____ _____	_____ _____
Outdoor Games (Specify the Games)	_____ _____ _____	
Essay Competition	_____ _____ _____	
Scientific Technical Exhibitions	_____ _____ _____	
Debate	_____ _____ _____	
Drama	_____ _____ _____	
Dance	_____ _____ _____	
Music	_____ _____ _____	

Fine Arts
_____
_____
_____

Painting
_____
_____
_____

Hobby Club
_____
_____
_____

N.S.S.
_____
_____
_____

H ostel Mgt
Activities
_____
_____
_____

Any other
activity (Please
Specify)
_____
_____
_____

III. Educational tours/visits/Membership of Professional Societies (5 Marks)
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

IV. Contribution in NSS Social Welfare Floor Relief/draught relief/Adult Literacy mission/Literacy Mission/Blood Donation/Any other Social Service
(5 Marks)
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

V. Briefly evaluate your academic & other performance & achievements in the Institution (5 Marks)
_____
_____
_____
_____

VI. Performance in Viva voce before the committee (10 Marks)
_____
_____
_____

*Marks obtained   1.(   )+II(   )+III(   )+IV(   )+V(   )+VI(   ) =
**Total Marks :

Member   Member   Member   Member   Member

MAHARSHI DAYANAND UNIVERSITY, ROHTAK

SCHEME OF STUDIES & EXAMINATIONS

B.Tech. 4th YEAR CIVIL ENGINEERING, SEMESTER- VIII

(Scheme-F)

EFFECTIVE FROM THE SESSION 2012-13

		Subject	Internal Marks	External Marks	Total Marks
1.	**CE- 402-F**	Industrial Training/Institutional Project Work	150	150	300

Note:

The students are required to undergo Industrial Training in State/Central PWD, Railways and other Originations or Institutional Project Work of duration not less than 4 months in a reputed organization or concerned institute. The students who wish to undergo industrial training, the industry chosen for undergoing the training should be at least a private limited company. The students shall submit and present the mid-term progress report at the Institute. The presentation will be attended by a committee. Alternately, the teacher may visit the Industry to get the feedback of the students.

The final viva-voce of the Industrial Training or Institutional Project Work will be conducted by an external examiner and one internal examiner appointed by the Institute. External examiner will be from the panel of examiners submitted by the concerned institute approved by the Board of Studies in Engg. & Technology. Assessment of Industrial Training or Institutional Project Work will be based on seminar, viva-voce, report and certificate of Industrial Training or Institutional Project Work obtained by the student from the industry or Institute.

The internal marks distributions for the students who have undergone Industrial Training consist of 50 marks from the industry concern and 100 marks by the committee members consisting of faculty members of concerned department of the parent institute.

The teachers engaged for Institutional Project work shall have a workload of 2 hours per group (at least 4 students) per week.