

Bhujbal Knowledge City
MET's Institute of Technology, Polytechnic, Nashik
Department of Civil Engineering

Course Outcomes
MSBTE prescribed syllabus, as per the Scheme 'I'

Semester-I (I scheme)	
Course Title- Fundamental of ICT (22001)	
22001.a	Use computer system and its peripherals.
22001.b	Prepare business document using word processing tool.
22001.c	Interpret data and represent it graphically using spread sheet.
22001.d	Prepare professional presentations.
22001.e	Use different types of web browsers.
Course Title- Engineering Graphics (22002)	
22002.a	Draw geometrical figures and engineering curves.
22002.b	Draw the views of given object using principles of orthographic projection.
22002.c	Draw isometric views of given component.
22002.d	Use drawing codes, conventions and symbols as per IS SP 46 in engineering drawing.
22002.e	Draw free hand sketches of given engineering element.
Course Title- Workshop Practice (22004)	
22004.a	Select tools and machinery according to job.
22004.b	Use hand tools in different shops for performing different operation.
22004.c	Operate equipment and machinery in different shops.
22004.d	Prepare job according to drawing.
22004.e	Maintain workshop related tools, equipment and machinery
Course Title- English (22101)	
22101.a	Formulate grammatically correct sentences.
22101.b	Summarize comprehension passages.
22101.c	Compose dialogues and paragraphs for different situations.
22101.d	Use relevant words as per context.
22101.e	Delivered prepared speeches as per ideas, thoughts and emotions.
Course Title- Basic Science (22102)	
22102.a	Estimate errors in the measurement of physical quantities.
22102.b	Apply the principles of electricity and magnetism to solve engineering problems.
22102.c	Use the basic principles of heat and optics in related engineering applications.
22102.d	Apply the catalysis process in industries.
22102.e	Use corrosion preventive measures in industry.
22102.f	Use relevant engineering materials in industry.
Course Title- Basic Mathematics (22103)	
22103.a	Apply the concepts of Algebra to solve engineering related problems.
22103.b	Utilize the basic concept of trigonometry to solve elementary engineering problems.
22103.c	Solve basic engineering problems under given condition of straight lines.
22103.d	Solve the problems based on measurement of regular closed figures and regular solids.
22103.e	Use basic concept of statistics to solve engineering related problems.
Semester- II (I scheme)	
Course Title- Applied Mathematics (22201)	
22201.a	Calculate the equation of tangent, maxima, minima, radius of curvature by differentiation.

22201.b	Solve the given problem of integration using suitable methods.
22201.c	Apply the concept of integration to find area and volume.
22201.d	Solve the differential equation of first order and first degree using suitable methods.
22201.e	Apply the concept of numerical integration to investigate the area.
Course Title- Applied Science (22202)	
22202.a	Select relevant material in industry by analyzing its physical properties.
22202.b	Apply laws of motion in various applications.
22202.c	Use LASER'S, X-Rays and photo electric sensors.
22202.d	Select the relevant metallurgical process related to industrial application.
22202.e	Use relevant water treatment process to solve engineering problems.
22202.f	Use relevant fuel in relevant application
Course Title- Applied Mechanics(22203)	
22203.a	Identify the force systems for given conditions by applying the basics of mechanics
22203.b	Select the relevant simple lifting machine(s) for given purposes.
22203.c	Determine unknown force(s) of different engineering systems.
22203.d	Check the stability of various force systems
22203.e	Apply the principles of friction in various conditions for useful purposes
22203.f	Find the centroid and Centre of gravity of various components in engineering Systems.
Course Title- Construction Materials (22204)	
22204.a	Identify relevant construction materials.
22204.b	Identify relevant natural construction materials.
22204.c	Select relevant artificial construction materials.
22204.d	Select relevant special type of construction materials.
22204.e	Select relevant finishing materials for construction.
22204.f	Identify processed construction materials.
Course Title-Basic Surveying (22205)	
22205.a	Select the type of survey required for given situation.
22205.b	Compute area of open field using chain, tape and cross staff.
22205.c	Conduct traversing in the field using chain and compass.
22205.d	Use leveling instruments to determine reduced level of ground points
22205.e	Draw/interpret contour maps of an area collecting field data.
22205.f	Use digital planimeter to calculate the areas.
Course Title- Civil Engineering Workshop Practice (22008)	
22008.a	Identify the various construction activities at site.
22008.b	Perform masonry job activities.
22008.c	Perform plumbing job activities.
22008.d	Identify finishing jobs related to building construction.
22008.e	Identify the various components of typical civil structures like culvert/bridges.
Course Title- Business communication with computers (22009)	
22009.a	Communicate effectively by avoiding barriers in various formal and informal situations.
22009.b	Communicate skillfully using non verbal methods of communications.
22009.c	Give presentations by using audio-visual aids.
22009.d	Write reports using correct guidelines.
22009.e	Compose e-mail and formal business letters.
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Semester- III (I scheme)	
Course Title- Advanced Surveying , Course Code 22301	
22301.a	Prepare plans using Plane Table Surveys.
22301 b	Prepare plans using Theodolite surveys.
22301 c	Find distances and elevations using Tacheometer.
22301 d	Set out simple circular curves.

22301 e	Prepare plans using Total Station instrument.
22301 f	Locate coordinates of stations using GPS.
Course Title- Highway Engineering , Course Code 22302	
22302.a	Identify the types of roads as per IRC recommendations.
22302.b	Implement the geometrical design features of different highways.
22302.c	Perform different tests on road materials.
22302.d	Evaluate traffic flow characteristics .
22302.e	Implement hill road construction using relevant materials , techniques and methods .
22302.f	Undertake maintenance of roads and drainage
Course Title- Mechanics of Structures , Course Code 22303	
22303.a	Articulate practical applications of moment of inertia of symmetrical and unsymmetrical structural sections.
22303.b	Interpret structural behaviour of materials under various loading conditions.
22303.c	Select material considering engineering properties for various structural applications.
22303.d	Interpret shear force and bending moment diagrams for various types of beams and loading conditions.
22303.e	Determine the bending and shear stresses in beams under different loading conditions.
22303.f	Check the column safety for various loading and end conditions .
Course Title- Building Construction , Course Code 22304	
22304 a	Identify Components of building structures
22304 b	Propose suitable type of foundation for building structures
22304 c	select suitable type of masonry for building structures
22304 d	Propose relevant means of communications for different types of buildings.
22304 e	select the relevant material for finishing works
22304 f	Execute safe practices in building construction activities.
Course Title- Concrete Technology , Course Code 22305	
22305.a	Use relevant types of cement in different site conditions.
22305.b	Use relevant aggregates for required concrete works.
22305.c	Prepare concrete of desired compressive strengths.
22305.d	Prepare concrete of required specifications.
22305.e	Maintain the quality of concrete.
22305.f	Use relevant admixtures for concreting for different weather conditions.
Course Title- COMPUTER AIDED DRAWING , Course Code 22022	
22022a	Interpret the given 2 dimensional drawing.
22022b	Use CAD software for drafting and editing 2-dimensional drawings.
22022c	Locate the dimensions of the drafted drawing.
22022d	Draw the isometric and 3-dimensional drawing.
Semester – IV (I scheme)	
Course Title-Hydraulics, Course Code-22401	
22401.a	Interpret the pressure parameters from pressure measuring devices in flowing liquids.
22401.b	Determine total hydrostatic pressure and centre of pressure for different conditions.
22401.c	Use relevant fluid flow parameters in different situations.
22401.d	Determine the loss of head of fluid flow through pipes.
22401.e	Find the fluid flow parameters in open channels.
22401.f	Select relevant hydraulic pumps for different applications.
Course Title-Theory of Structures, Course Code-22402	
22402.a	Analyze stresses induced in vertical member subjected to direct and bending loads.
22402.b	Analyze slope and Deflection in beams under different loading conditions.
22402.c	Analyze end moments of fixed beams.
22402.d	Analyse continuous beam under different loading conditions using the principles of Three Moments.
22402.e	Analyse continuous beam using Moment Distribution Method under different loading conditions.

22402.f	Evaluate axial forces in the members of simple truss.
Course Title-Railway and Bridge Engineering ,Course Code-22403	
22403.a	Identify the components of railway tracks.
22403.b	Maintain the railway tracks.
22403.c	Diagnose the condition of bridges.
22403.d	Maintain different types of railway bridges and their components.
22403.e	Maintain different types of tunnels.
Course Title-Geo-Technical Engineering, Course Code-22404	
22404.a	Identify types of rocks and sub soil strata of earth.
22404.b	Interpret the physical properties of soil related to given construction activities.
22404.c	Use the results of permeability and shear strength test for foundation analysis.
22404.d	Interpret the soil bearing capacity results .
22404.e	Compute optimum values for moisture content for maximum dry density of soil through various
Course Title-Building Planning and Drawing Course Code-22405	
22405.a	Interpret the symbols, signs and conventions from the given drawing.
22405.b	Prepare line plans of residential and public buildings using principles of planning.
22405.c	Prepare submission and working drawing from the given requirement for Load Bearing Structure.
22405.d	Prepare submission and working drawing from the given requirement for Framed Structure.
22405.e	Draw Two point perspective drawing for given small objects.
Course Title-Environmental Studies Code-22447	
22447.a	Develop Public awareness about environment
22447.b	Select alternative energy resources for Engineering Practice
22447.c	Conserve Ecosystem and Biodiversity
22447.d	Apply techniques to reduce Environmental Pollution
22447.e	Manage social issues and Environmental Ethics as lifelong learning
Semester – V (I scheme)	
Course Title- Water Resource Engineering , Course Code- 22501	
22501.a	Estimate hydrological parameters.
22501.b	Estimate crop water requirements of a command area and capacity of canals.
22501.c	Maintain irrigation structures.
22501.d	Execute the Minor and Micro Irrigation Schemes.
22501.e	Select the relevant Diversion Head works for the 'specific site conditions.
22501.f	Design, construct and maintain simple Canal structures.
Course Title- Design of Steel and RCC Structures , Course Code- 22502	
22502.a	Use steel table and IS code 800:2007 at work sites.
22502.b	Design the connections for the given steel joints.
22502.c	Analysis and design of singly reinforced rectangular beams.
22502.d	Design of shear reinforcement and development length for beam and slabs.
22502.e	Design various slabs for the given edge condition.
22502.f	Design of axially loaded short columns and footings.
Course Title- : Estimating and Costing , Course Code- 22503	
22503.a	Select the modes of measurements for different items of works.
22503.b	Prepare approximate estimate of a civil engineering works.
22503.c	Prepare detailed estimate of a civil engineering works.
22503.d	Justify the rate for given items of work using rate analysis techniques.
22503.e	Use relevant software for estimating the quantities and cost of items of works.
Course Title- Public Health Engineering , Course Code- 22504	
22504.a	Identify the sources and characteristics of water and wastewater.

22504.b	Estimate the quantity of drinking water and wastewater generated.
22504.c	Draw labeled systems of plumbing for building sanitation.
22504.d	Draw the flow diagram for process of treatment of water and wastewater.
22504.e	Identify various accessories for efficient conveyance and distribution of water.
Course Title- Traffic Engineering (Elective), Course Code- 22507	
22507.a	Analyze the road traffic characteristics.
22507.b	Undertake various types of road traffic studies.
22507.c	Use the relevant road traffic signs and markings.
22507.d	Select the relevant road signals for the given traffic islands
22507.e	Maintain the road environment.
22507.f	Suggest preventive measures to avoid accidents by analyzing the traffic conditions at site.
Course Title- Capstones Project Planning , Course Code- 22058	
22058.a	Write the problem/task specification in existing systems related to the occupation.
22058.b	Select, collect and use required information /knowledge to solve the problem /complete the task.
22058.c	Logically choose relevant possible solution(s).
22058.d	Consider the ethical issues related to the project (if there are any).
22058.e	Assess the impact of the project on society (if there is any).
22058.f	Prepare 'project proposals' with action plan and time duration scientifically beginning project
22058.g	Communicate effectively and confidently as a member and leader of team.
Course Title- Industrial Training (22057)	
22057.a	Communicate effectively (verbal as well as written) the work carried out.
22057.b	Prepare and present the report of the work carried out.
22057.c	Exercise time management and safety in the work environment.
22057.d	Working as a team.
22057.e	Demonstrate various quality assurances.
22057.f	Exhibit the work carried out.

Semester – VI (I scheme)

Course Title-. Management , Course Code- 22509	
22509.a	Use basic management principles to execute daily activities.
22509.b	Use principles of planning and organising for accomplishment of tasks.
22509.c	Use principles of directing and controlling for implementing the plans.
22509.d	Apply principles of safety management in all activities.
22509.e	Understand various provisions of industrial acts.
Course Title-. Contracts and Account , Course Code- 22601	
22601.a	Execute the method of PWD for initiating the works.
22601.b	Execute the contracts of civil engineering works.
22601.c	Prepare the tender documents for civil engineering works.
22601.d	use the relevant type of form used in PWD to pay the bill of the executed work
22601.e	Prepare the detailed specification for various items of construction.
22601.f	Justify the rent fixation of civil structures.
Course Title-. Maintenance and Repairs of Structures , Course Code- 22602	
22602.a	Select the relevant method of maintaining different building structures.
22602.b	Test the structures to predict its stability.
22602.c	Select the relevant materials for repairs of structures.
22602.d	Apply the relevant methods of repair for the masonry structures.
22602.e	Restore the damages of building structural elements using suitable method of repair.
22602.f	Prepare the structural audit and budget for the maintenance of structures.
Course Title-. Emerging Trends in Civil Engineering , Course Code- 22603	
22603.a	Reveal different applications of software's for planning, designing and execution of projects.
22603.b	Suggest the advanced material as per site condition

22603.c	Recommend the suitable tools and equipments for the given situaion.
22603.d	Suggest the advanced resource management technipues for the given project.
22603.e	use the feasible advance techniques for various civil engineering projects.
Course Title-. Solid Waste Management (Elective-II), Course Code- 22605	
22605.a	Identify the different sources of solid wastes
22605.b	Execute the relevant method of collection and transportation of solis wastes.
22605.c	Execute an action plan for disposal of solid wastes.
22605.d	Implement the relevant method for disposal of Bio-medical wastes.
22605.e	Implement the relevant method for disposal of Industrial wastes and E-waste..
22605.f	Implement the relevant lawas related to solid waste management.
Course Title-. Advanced Design of Structures (Elective-II), Course Code- 22607	
22607.a	Design the steel tension members under different loading conditions.
22607.b	Design the steel compression members under different loading conditions.
22607.c	Design the doubly-reinforced rectangular RCC beams under different loading conditions.
22607.d	Design the flanged RCC beams under different loading conditions.
22607.e	Design waist slabs of RCC dog legged staircase.
22607.f	Design the circular columns and the isolated RCC rectangular column footings.
Course Title-. Capstone Project-Execution & Report Writing, Course Code- 22060	
22060.a	Implement the planned activity individuly and/or as team.
22060.b	Select,collect and use required information/knowledge to solve the identified problems.
22060.c	Take appropriate decisions based on collected and analyzed information.
22060.d	Ensure quality in product
22060.e	Incorporate energy and environment conservation principles.
22060.f	Incorporate energy and environment conservation principles.
22060.g	Consider the ethical issues related to the project. (If there is any).
22060.h	Assess the impact of the project on society.(if there is any)
22060.i	Communicate effectively and confidently as a member and a leader of team.
Course Title- Construction Management (22061)	
22061.a	Organize the human resources for civil engineering projects.
22061.b	Prepare the networks and bar charts for the given construction projects.
22061.c	Apply safety measures at construction projects.
Course Title- Entrepreneurship Development (22032)	
22032.a	Identify your entrepreneurial traits.
22032.b	Identify the business opportunities that suit you.
22032.c	Use the support system to zero down to your business idea.
22032.d	Develop comprehensive business plan.
22032.e	Prepare the plans to manage the enterprise effectively.