Pokhara University
Faculty of Science and Technology
Entrance Exam Curriculum
Master of Science in Public Health and Disaster Engineering (PHDE)

Total Marks: 100/150   **Quantifying Marks: 45/53**
Time: 2/3 hrs

Entrance curriculum mainly covers common topics all streams covering Verbal Ability Mathematics (Quantitative aptitude), General Knowledge, and content related to Bachelor of Science, Engineering, Architecture and Management.

Section	Course	Weightage (%)
A	Verbal Ability	10
B	Fundamental of Mathematics	10
C	General Awareness	10
D	Basic Water Science, Engineering and Hydrology	20
E	Basic Water Supply and Sanitary Engineering	20
F	Building Material and Construction	20
G	Engineering Professional Practice	10

A. Verbal Ability
Article, Voice, Reported speech, Tense Contrast, Events in rapid succession (No sooner…than/had only just…when), Correct form of verbs, Stress/Intonation, Causative verbs, Question tag, Sentence transformation (Negative/Positive, Verbal/Wh etc), Decision and intentions, Suggestions/Advice, AmE/BrE English words, Connectives, Right order/ Wrong order with Tenses, Singular/Plural nouns, Subject verb agreement, Relative clause, Expressing new experience, Co-relative conjunctions, Homophones/homonyms, Sense verbs with bare infinitive and gerund, To +infinitive & gerund, Discovering similarities, Conditional sentence, Requests & Offer, Prepositions, Word formation, Parts of speech, Degrees of Adjectives, Verbs and their forms, Synonyms & Antonyms, Identification of Simple, Compound and Complex sentences, Formal and informal words/sentences, Slang/Colloquial/Derogative words, English language or literature related quotations, Standard academic abbreviations (IELTS, GRE, GMAT, SAT etc), Single word for personality traits, Standard vocabulary (Kleptomania, chauvinism, supercilious, rationalize etc), General Knowledge on current affairs of the globe.

B. Fundamental of Mathematics
Basic Mathematics (Numbers: Fractions, Decimals and Percentages; Ratio and Proportion; Roots and Power; Logarithms; Progressions; Elementary Geometry; Elementary Trigonometry; Introductory Set Theory) Algebra (Polynomial, Equations and Inequalities; Simultaneous equations and solutions; Elementary Linear Programming, Vector Algebra); Calculus (limits and continuity, differentiation, integration, ordinary first order linear differential equation, partial differential equation), Introduction of Probability and Statistics, Permutations and Combinations.

C. General Awareness

This section covers the general knowledge of environment, geography, environment / water law and regulations; economics and human development indicators in Nepal, general physics and chemistry knowledge related to bachelor of science and engineering.

D. Basic Water Science, Engineering and Hydrology

Physical properties, Fluid pressure, Equilibrium stability of floating bodies, Fluid kinematics, Classification of fluid flow, Dynamics of flows, Euler's equation, Bernoulli's equation, Navier stokes equation Boundary layer theory, Momentum equation, Open channel flow, Uniform and Non uniform flow, Energy & momentum principle for open channel flow, Flow in mobile boundary channel, Flow over notches & weirs, Gradually varied flow, Hydraulic Jump and its analysis, Similitude and physical modeling, Physical hydrology, Surface runoff, Rainfall-runoff correlation, Hydrograph Analysis, Unit hydrographs, Peak flow estimation, measurement of flow, hydrology and climatology

E. Basic Water Supply and Sanitary Engineering

Sources of water, quantity of water, quality of water, intake works, water treatments- natural, artificial, sedimentation, filtration, disinfection, reservoirs and distribution system, conveyance of water, valves and fittings used in civil structure. quantity of waste water, characteristics and examination of sewage, design and construction of sewers, sewer appurtenances, sewage disposal, sewage treatment, sludge treatment and disposal, solid waste management and practices in Nepal.

F. Building Material and Construction

Types of foundations, common problems, earthquake effect on foundation and damp-proof course, Brick, block and stone masonry work, Floors, Vertical transportation and roofs, Openings covering doors, windows and ventilations, Scaffolding, cladding and external finishing, Electrical services.

G. Engineering Professional Practice

Ethics and Profession, Code of Conduct, Professional Associations, Nepal Engineering Council Act, Liability and Negligence, Professional Liability Insurance, Detailed duties of Engineers, Types of Business Organizations, Labor Law and Intellectual Property right.