

विभाग / Department
जल ससाधन एवमसागर अभिया शिकी
Water Resources and Ocean
Engineering

राष्ट्रीय प्रौद्योगिकी संस्थान कर्नाटक, सुरथकल, मंगलूरु-५७५०२५
(राष्ट्रीय महत्व का संस्थान, एनआईटीएसईआर अभ्यधनयम तहत स्थापित, िारत सरकार)
National Institute of Technology Karnataka, Surathkal, Mangaluru – 575025
(An Institute of National Importance, Established under NITSER Act, Government of India)
दूरभाष/ Phone: +91-824-2474034 (O) , ई-मेल / E-mail: hodwroe@nitk.edu.in



General Instructions for the candidates appearing for the M.Tech. (Self-Financed) Written Aptitude Test and Interview

1. Syllabus for the written aptitude test is provided in the Annexure.
2. The mode of written aptitude test is offline. The details of examination will be announced in the institute's website (<https://www.nitk.ac.in/>). For any updates, the candidates are informed to visit the Institute's website regularly.
3. There will be 30 Multiple Choice Question (MCQ) for the M.Tech. (Self-Financed) Written Aptitude test. For every question, four options will be given. The candidates are expected to select the correct option.
4. Each correct answer carries one mark. Total marks for the test is 30.
5. The duration of the test is 60 minutes.
6. The candidates are allowed to use scientific calculators for solving the numerical problems.
7. After the written test the shortlisted candidates will be allowed to attend the M.Tech. (Self-Financed) interview.
8. **Date and Time of Written Test: 25th June 2025 (Wednesday), 2:00 PM –3:00 PM.**
9. **Date and Time of Interview: 25th June 2025 (Wednesday), 3:30 PM Onwards.**


Head of the Department
विभागाध्यक्ष / HOD

ज.सं. एवं म. अशि. विभाग / Dept. of WROE
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कर्नाटक, भारत / Karnataka, India

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Annexure

Syllabus for M.Tech. (Self-Financed) Written Aptitude Test

Engineering Mechanics: System of Forces, Free-Body Diagrams, Equilibrium Equations; Internal Forces in Structures; Plane Truss, Second Area Moment.

Solid Mechanics: Bending Moment and Shear Force in Statically Determinate Beams; Simple Stress and Strain Relationships; Simple Bending Theory, Flexural and Shear Stresses, Uniform Torsion, Buckling of Column.

Fluid Mechanics: Properties of fluids, Fluid statics; Continuity, Momentum, Energy equations and their applications; Potential flow, Laminar and turbulent flow; Flow in pipes, pipe networks; Concept of boundary layer and its growth.

Numerical Methods: Accuracy and Precision; Error Analysis. Numerical Solutions of Linear and Non-Linear Algebraic Equations; Least Square Approximation, Newton's and Lagrange Polynomials, Numerical Differentiation, Integration by Trapezoidal and Simpson's rule, Single and Multi-Step Methods for First Order Differential Equations.

Calculus: Functions of Single Variable; Limit, Continuity and Differentiability; Mean Value Theorems, Local Maxima and Minima.

Head of the Department

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National Institute of Technology Karnataka

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