# **Engineering Mechanics**

PEN-Drive / G-Drive Course & LIVE Classroom Program

Workbook

Civil Engineering
Mechanical Engineering



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# Environmental Engineering

PEN-Drive / G-Drive Course & LIVE Classroom Program

Workbook

Civil Engineering



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### Fluid Mechanics

PEN-Drive / G-Drive Course & LIVE Classroom Program

Workbook

Civil Engineering
Mechanical Engineering



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# **Geotechnical Engineering**

PEN-Drive / G-Drive Course & LIVE Classroom Program

Workbook

Civil Engineering



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# **Hydrology & Irrigation**

PEN-Drive / G-Drive Course & LIVE Classroom Program

Workbook

Civil Engineering



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# **Open Channel Flow**

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# RCC Structure & Prestressed Concrete

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7	Determination of Yield Point in HYSD Bars	0:14:39
8	Creep and Shrinkage of Concrete	0:46:06
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4	Control on Deflection in Beam and One Way Slab	0:27:46
5	Question Based on Control on Deflection	0:19:22
6	Control on Deflection in Two Way Slab	0:09:20
7	Check for Lateral Stability of Beams	0:33:41
8	IS Code Recommendation for Design of Slabs	0:15:59
9	Types of Slab (One Way & Two Way)	0:38:02
10	Workbook Q.2 - Q.3	0:10:36
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12	Bending Moment and Shear Force Coefficients for a Continuous Beam/Slab	0:14:59
13	Load Distribution in Two Way Slab	0:29:24
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15	Introduction to Staircase and it's Effective Span	0:09:55
16	Workbook Q.4	0:02:28
17	Workbook Assignment Q.2	0:49:20

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2	Minimum Eccentricity	0:23:14
3	Different Types of Column Design	0:19:51
4	Assumptions in Limit State of Collapse Under the Compression Condition	0:33:59
5	Workbook Q.1 - Q.4	0:08:40
6	Analysis and Design of Axially Loaded Columns	0:45:55
7	IS Code Recommendations	0:43:19
8	Workbook Q.5 - Q.7	0:17:22
9	Analysis and Design of Helically Reinforced Column	0:35:21
10	Workbook Assignment Q.1	0:27:13
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12	Design of Columns Subjected to Axial Load and Uniaxial Bending	0:35:17
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14	Workbook Q.8	0:04:49
15	Design of Long Columns	0:11:41
16	IS Code Recommendations for Design of RCC Walls	0:08:23
17	Estimation of Upward Soil Pressure	0:31:06
18	IS Code Recommendations for Design of Footings	0:18:36
19	Analysis and Design of Footing	0:19:24
20	Bending Moment Criteria	0:37:05
21	One Way Shear Criteria	0:29:28
22	Two Way Shear Criteria	0:25:00
23	Design of Depth and Steel Reinforcement for Footing	0:27:18
24	Transfer of Loads	0:23:55
25	Workbook Q.9 - Q.10	0:15:00
26	Introduction to Working Stress Method and Modular Ratio	0:21:56
27	Design Philosophy of Working Stress Method	0:29:08
28	Assumptions and Recommendations in Working Stress Method of Design	0:40:10
29	Analysis and Design of a Singly Reinforced Beam Section Using WSM	0:16:39
30	Critical Depth of Neutral Axis and Type of Sections in WSM	0:21:51
31	Expected Type of Problem From Singly Reinforced Beam (Part 1)	0:28:29
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34	Analysis of Doubly Reinforced Beam Using WSM	0:25:01
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36	Workbook Q.11 - Q.16	0:24:09
	sed Concrete	1 2:= ::30
1	Introduction to Prestressed Concrete	0:15:44
2	Types of Prestressed Concrete	0:30:59
3	Merits and Demerits of Prestressed Concrete	0:12:13
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5	Workbook Q.1 - Q.2	0:42:04
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21	Motivation and Guidance	0:08:16
20	Bricks and Different IS Code Recommendations	0:24:40
19	Workbook Q.13	0:08:51
18	Admixtures and Their Different Types	0:29:58
17	Workbook Q.9 - Q.12	0:12:02
16	Tensile Strength Test of Concrete	0:19:11
15	Compressive Strength Test - Non Destructive Test	0:51:10
14	Compressive Strength Test - Destructive Test	0:21:06
13	Workability Test - Vee Bee Test	0:22:14
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10	Workability Test - Slump Cone Test	0:31:24
9	Introduction to Concrete and It's Workability	0:38:32
8	Workbook Q.1 - Q.8	0:18:19
7	Types of Cement	0:21:34
6	Laboratory Tests of Cement - Soundness Test & Strength Test	0:39:27
5	Laboratory Tests of Cement - Consistency Test & Setting Time Test	0:36:16
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2	Bouge's Compounds	0:39:05
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21	Difference Between Pretensioned and Post Tensioned Concrete	0:14:41
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11	Loss of Prestress Due to Elastic Shortening of Concrete	0:45:26
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## Strength of Material

PEN-Drive / G-Drive Course & LIVE Classroom Program

Workbook

Civil Engineering
Mechanical Engineering



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2.	Principal Stress-Strain and Mohr's Circle	12
3.	Shear Force and Bending Moment	19
4.	Bending of Beam and Shear Centre	27
5.	Torsion	37
6.	Deflection of Beam and Strain Energy	43
7.	Columns	52
8.	Thin Cylinder	55
9.	Theory of Failure	58

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02	Stress and its Types	0:44:23
03	Special Concept on Stress	0:14:09
04	Stress Tensor for 3D and 2D	0:27:52
05	Scalar, Vector & Tensor Quantity	0:04:14
06	Question Number 1	0:03:46
07	Strain and its Types and Strain tensor	0:37:11
08	Hooke's Law and Elongation of Different Bars	0:41:15
09	Elongation Under Multi Uniaxial Loading	0:07:33
10	Question Number 2 to 5	0:14:50
11	Question Number 6 and 7	0:12:30
12	Question Number 8 to 11	0:20:06
13	Series and Parallel Combination of Bars	0:26:52
14	Statically Determinate and Indeterminate Bars	0:28:07
15	Question Number 12 to 14	0:11:40
16	Question Number 15 and 16	0:21:20
17	Question Number 17 and 18	0:18:34
18	Loading w.r.t Time (Gradual, Sudden, Impact)	0:30:57
19	Question Number 19	0:07:14
20	Induce Stress, Permissible Stress and Design on Strength Criteria	0:25:19
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22	Question Number 21	0:14:07
23	Isotropic and Homogenous Materials	0:05:21
24	Elastic Constants (E, K, G & Poisson's Ratio)	0:31:32
25	Relation between Elastic Constants (E,K,U,G)	0:19:04
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31	Thermal Stress (Partially Prevented Case)	0:19:04
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39	Thermal Stress (Non Uniform Heating and Cooling)	0:11:41
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41	Engineering Stress Strain Curve for Ductile Material	0:08:07 0:36:43
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44 45	Stress Strain Curve (Various Cases)  Question Number 43 to 45	0:22:30 0:15:39
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06	Mohr's Circles (Hydrostatic Loading) (Special Case-1)	0:34:21
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07 08	Mohr's Circle (Rotation of Body)	0:04:23
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15	Question Number 20 to 22	0:10:33
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08 09	Rules to Draw SFD & BDM (Example-1)  Example-2 (SFD and BMD with UDL)	0:33:26 0:32:41
10	Example-3 (SFD & BMD)	0:32:41
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18	Example-5 (SFD & BMD with UVL)	0:30:32
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24	Example-6 (Load Diagram from SFD Diagram)  Question Number 16 and 17	0:17:04
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10	Section Modulas (Z)	0:25:31
11	Question Number 9 and 10	0:28:04
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25	Beam of Uniform Strength	0:14:01
26	Shear Center (With Example Question 22) (Only for Civil Engineering)	0:16:09
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03	Theory of Pure Torsion (Torsion Equation)	0:40:40
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07	Comparision of Axial and Torsion (Very Important Concept)	0:36:05
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11	Moment Area Method (Example 3)	0:10:10
12	Limitation of Moment Area Method	0:04:46
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### CPM & PERT

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Workbook

Civil Engineering



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3	Workbook Q.1 - Q.2	0:17:16
4	Workbook Q.3 - Q.6	0:23:54
5	CPM - Floats	0:29:09
6	Workbook Q.7 - Q.8	0:14:36
7	PERT - Program Evaluation & Review Technique	0:23:37
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10	Effect of Delay & Earliness (Crash)	0:52:36
11	Workbook Q.12 - Q.13	0:07:02
12	Crashing of Project Network	0:54:54
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## **Structural Analysis**

PEN-Drive / G-Drive Course & LIVE Classroom Program

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Civil Engineering



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3.	Matrix Method of Structural Analysis	15
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20	Workbook MCQ & NAT Q.1 to Q.4	0:31:14
21	Workbook MCQ & NAT Q.5 to Q.7	0:15:26
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3	Difference between Force Method & Displacement Method	0:46:09
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17	Strain Energy Method	0:30:50
18	Workbook Assignment Q.11 using Strain Energy Method	0:30:30
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# Transportation Engineering

PEN-Drive / G-Drive Course & LIVE Classroom Program

Workbook

Civil Engineering



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