

GOVERNMENT POLYTECHNIC GARIYABAND
GARIYABAND (C.G.)
LESSION PLAN
SESSION - JULY-DEC 2025

NAME OF FACULTY : CHANDRESH KUMAR DEWANGAN

DESIGNATION : LECTURER (MECHANICAL)

DEPARTMENT : MECHANICAL ENGINEERING

COURSE : STRENGTH OF MATERIAL

COURSE CODE : 2037372(037)

SEMESTER : III

SESSION STARTS FROM : 29.09.2025

| Lecture No. | Unit No. | Topics to be Covered | Planned Date | Execution Date | Remarks |
|-------------|----------|-------------------------------------|--------------|----------------|---------------------|
| 1 | I | Types of Loads & Structures | 29.09.2025 | 06/10/25 | Lecture + Board |
| 2 | I | Direct Stress & Strain | 30.09.2025 | 07/10/25 | Lecture + Numerical |
| 3 | I | Hooke's Law, Stress-Strain Curve | 01.10.2025 | 07/10/25 | PPT + Board |
| 4 | I | Elastic Constants, Poisson's Ratio | 06.10.2025 | 08/10/25 | Lecture + Numerical |
| 5 | I | Temperature Stress | 07.10.2025 | 13/10/25 | Lecture + Examples |
| 6 | I | Shear Stress & Strain | 08.10.2025 | 13/10/25 | Board Work |
| 7 | I | Bulk Modulus & Volumetric Strain | 13.10.2025 | 14/10/25 | Lecture |
| 8 | I | Strain Energy & Numericals | 14.10.2025 | 14/10/25 | Tutorial |
| 9 | II | Types of Beams & Loadings | 15.10.2025 | 15/10/25 | Lecture |
| 10 | II | Shear Force Concept | 20.10.2025 | 15/10/25 | Board + Diagram |
| 11 | II | Bending Moment Concept | 21.10.2025 | 28/10/25 | Lecture + Examples |
| 12 | II | SFD – Cantilever (Point Load) | 22.10.2025 | 28/10/25 | Numerical |
| 13 | II | SFD – Cantilever (UDL) | 27.10.2025 | 29/10/25 | Numerical |
| 14 | II | SFD – Simply Supported (Point Load) | 28.10.2025 | 29/10/25 | Numerical |
| 15 | II | SFD – Simply Supported (UDL) | 29.10.2025 | 10/11/25 | Tutorial |
| 16 | III | Bending Theory & Assumptions | 03.11.2025 | 11/11/25 | Lecture |
| 17 | III | Bending Equation Derivation | 04.11.2025 | 12/11/25 | Derivation + Board |
| 18 | III | Neutral Axis & Section Modulus | 05.11.2025 | 17/11/25 | Numerical |

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|-------------|----------|--|--------------|----------------|------------|
| 19 | III | Bending Stress in Sections | 10.11.2025 | 18/11/25 | Numerical |
| 20 | III | Axial & Eccentric Loading | 11.11.2025 | 18/11/25 | Lecture |
| 21 | III | Resultant Stress in Eccentric Loading | 12.11.2025 | 19/11/25 | Numerical |
| 22 | III | Shear Stress in Beams | 17.11.2025 | 24/11/25 | Lecture |
| 23 | III | Numerical Practice | 18.11.2025 | 25/11/25 | Tutorial |
| 24 | IV | Introduction to Deflection | 19.11.2025 | 25/11/25 | Lecture |
| 25 | IV | Deflection – Cantilever (Point Load) | 24.11.2025 | 26/11/25 | Derivation |
| 26 | IV | Deflection – Cantilever (UDL) | 25.11.2025 | 01/12/25 | Numerical |
| 27 | IV | Deflection – Simply Supported (Point Load) | 26.11.2025 | 01/12/25 | Numerical |
| 28 | IV | Deflection – Simply Supported (UDL) | 01.12.2025 | 02/12/25 | Numerical |
| 29 | IV | Deflection Numericals | 02.12.2025 | 02/12/25 | Tutorial |
| 30 | V | Types of Springs | 03.12.2025 | 03/12/25 | Lecture |
| 31 | V | Helical Spring – Deflection | 08.12.2025 | 08/12/25 | Derivation |
| 32 | V | Helical Spring – Stress | 09.12.2025 | 08/12/25 | Numerical |
| 33 | V | Leaf Spring | 10.12.2025 | 15/12/25 | Lecture |
| 34 | V | Strain Energy in Spring | 15.12.2025 | 15/12/25 | Numerical |
| 35 | V | Spring Numericals | 16.12.2025 | 16/12/25 | Tutorial |
| 36 | VI | Combined Loading Concept | 17.12.2025 | 17/12/25 | Lecture |

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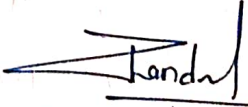
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| 37 | VI | Principal Stress Theory | 22.12.2025 | 17/12/25 | Derivation |
| 38 | VI | Inclined Plane Stress | 23.12.2025 | 22/12/25 | Numerical |
| 39 | VI | Maximum Shear Stress | 24.12.2025 | 22/12/25 | Numerical |
| 40 | VI | Mohr's Circle Theory | 29.12.2025 | 23/12/25 | Diagram + PPT |
| 41 | VI | Numerical – Analytical Method | 30.12.2025 | 24/12/25 | Tutorial |
| 42 | VI | Numerical – Mohr's Circle | 31.12.2025 | 31/12/25 | Tutorial |
| 43 | VII | Column & Strut Concept | 05.01.2026 | 31/12/25 | Lecture |
| 44 | VII | Euler's Buckling Theory | 06.01.2026 | 05/01/26 | Derivation |
| 45 | VII | Rankine's Formula | 07.01.2026 | 06/01/26 | Numerical |
| 46 | VII | Slenderness Ratio & Problems | 12.01.2026 | 07/01/26 | Tutorial |
| 47 | VIII | Torsion Theory | 13.01.2026 | 08/01/26 | Lecture |
| 48 | VIII | Torsion Equation | 14.01.2026 | 09/01/26 | Derivation |
| 49 | VIII | Power Transmitted by Shaft | 19.01.2026 | 14/01/26 | Numerical |
| 50 | VIII | Solid & Hollow Shaft Problems + Revision | 20.01.2026 | 16/01/26 | Revision + Tutorial |


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Chandresh Ku. Dewangan
Lecturer (Mechanical)

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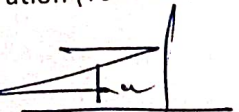
2037362(037)

SEMESTER : III

SESSION STARTS FROM : 29.09.2025

| Practical No. | Experiment Title | Planned Date | Execution Date | Remarks |
|---------------|--|--------------|----------------|---|
| 1 | Study of Universal Testing Machine (UTM) | 02.10.2025 | 09/10/25 | Video Demonstration (YouTube/Virtual Lab) + Discussion & Viva |
| 2 | | 03.10.2025 | 09/10/25 | |
| 3 | Tension Test on Mild Steel | 09.10.2025 | 10/10/25 | Video Demonstration (YouTube/Virtual Lab) + Discussion & Viva |
| 4 | | 10.10.2025 | 16/10/25 | |
| 5 | Compression Test on Specimen | 16.10.2025 | 24/10/25 | Video Demonstration (YouTube/Virtual Lab) + Discussion & Viva |
| 6 | | 17.10.2025 | 24/10/25 | |
| 7 | Bending Test on Beam | 23.10.2025 | 31/10/25 | Video Demonstration (YouTube/Virtual Lab) + Discussion & Viva |
| 8 | | 24.10.2025 | 31/10/25 | |
| 9 | Shear Test on Specimen | 30.10.2025 | 06/11/25 | Video Demonstration (YouTube/Virtual Lab) + Discussion & Viva |
| 10 | | 31.10.2025 | 06/11/25 | |
| 11 | Impact Test (Izod/Charpy) | 06.11.2025 | 07/11/25 | Video Demonstration (YouTube/Virtual Lab) + Discussion & Viva |
| 12 | | 07.11.2025 | 07/11/25 | |
| 13 | Hardness Test (Brinell/Rockwell) | 13.11.2025 | 23/11/25 | Video Demonstration (YouTube/Virtual Lab) + Discussion & Viva |
| 14 | | 14.11.2025 | 14/11/25 | |
| 15 | Torsion Test on Circular Shaft | 20.11.2025 | 20/11/25 | Video Demonstration (YouTube/Virtual Lab) + Discussion & Viva |
| 16 | | 21.11.2025 | 21/11/25 | |
| 17 | Spring Test – Determination of Stiffness | 27.11.2025 | 28/11/25 | Video Demonstration (YouTube/Virtual Lab) + Discussion & Viva |
| 18 | | 28.11.2025 | 28/11/25 | |
| 19 | Deflection of Beam – Cantilever | 04.12.2025 | 04/12/25 | Video Demonstration (YouTube/Virtual Lab) + Discussion & Viva |
| 20 | | 05.12.2025 | 05/12/25 | |
| 21 | Deflection of Beam – Simply Supported | 11.12.2025 | 11/12/25 | Video Demonstration (YouTube/Virtual Lab) + Discussion & Viva |
| 22 | | 12.12.2025 | 11/12/25 | |
| 23 | Verification of Euler's Buckling Theory | 18.12.2025 | 19/12/25 | Video Demonstration (YouTube/Virtual Lab) + Discussion & Viva |
| 24 | | 19.12.2025 | 01/01/26 | |
| 25 | Column Test on Different End Conditions | 25.12.2025 | 02/01/26 | Video Demonstration (YouTube/Virtual Lab) + Discussion & Viva |
| 26 | | 26.12.2025 | 08/01/26 | |
| 27 | Strain Measurement using Strain | 01.01.2026 | 08/01/26 | Video Demonstration (YouTube/Virtual Lab) + |

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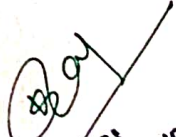
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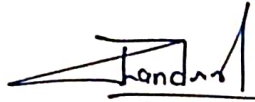
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|---------------|----------------------------------|--------------|----------------|---|
| 28 | Gauge (Demo) | 02.01.2026 | 09/01/26 | Discussion & Viva |
| 29 | Study of Fatigue Testing Machine | 08.01.2026 | 09/01/26 | Video Demonstration (YouTube/Virtual Lab) + |
| 30 | | 09.01.2026 | 09/01/26 | Discussion & Viva |


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