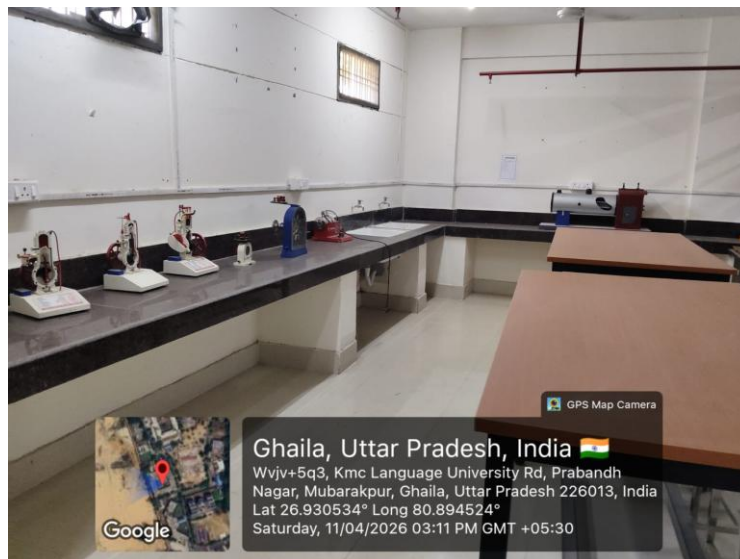


Labs

THERMAL ENGINEERING LAB

The Thermal Engineering Laboratory provides practical exposure to the principles of thermodynamics, heat engines, and energy conversion systems. The lab enables students to perform experiments on boilers, turbines, compressors, and thermal systems to understand energy transformations, efficiency, and performance characteristics. It helps bridge the gap between theoretical concepts and real-world thermal applications.



REFRIGERATION & AIR-CONDITIONING LAB

The Refrigeration and Air-Conditioning Laboratory focuses on the principles and applications of cooling and air-conditioning systems. Students gain hands-on experience with refrigeration cycles, compressors, condensers, evaporators, and psychrometric processes. The lab develops an understanding of designing, operating, and maintaining HVAC systems used in residential, commercial, and industrial sectors.



DIGITAL ELECTRONICS LAB

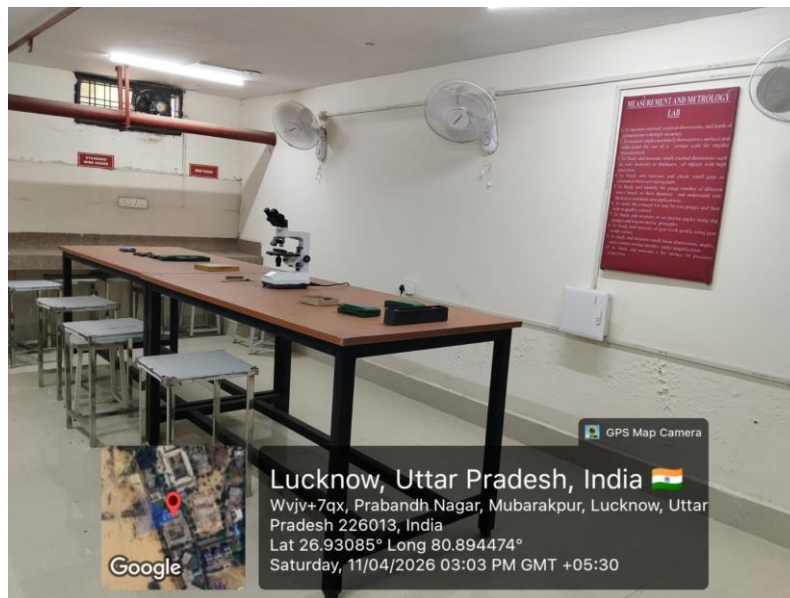
The Digital Electronics Laboratory introduces students to the fundamentals of digital systems and logic design. The lab provides practical training on logic gates, combinational and sequential circuits, counters, multiplexers, and flip-flops. Through experiments and circuit implementation, students develop skills in designing and analyzing digital electronic systems.

MICROPROCESSOR & MICROCONTROLLER LAB

The Microprocessor and Microcontroller Laboratory provides hands-on experience in programming and interfacing microprocessor and microcontroller-based systems. Students learn assembly language programming, interfacing techniques, and the development of embedded systems for various applications. The lab enhances problem-solving skills and prepares students for modern automation and control technologies.

MEASUREMENT & METROLOGY LAB

The Measurement and Metrology Laboratory focuses on precision measurement techniques and quality control practices used in engineering industries. Students are trained to use various measuring instruments such as vernier calipers, micrometers, comparators, and gauges. The lab develops accuracy, analytical skills, and an understanding of standards and tolerances in manufacturing processes.



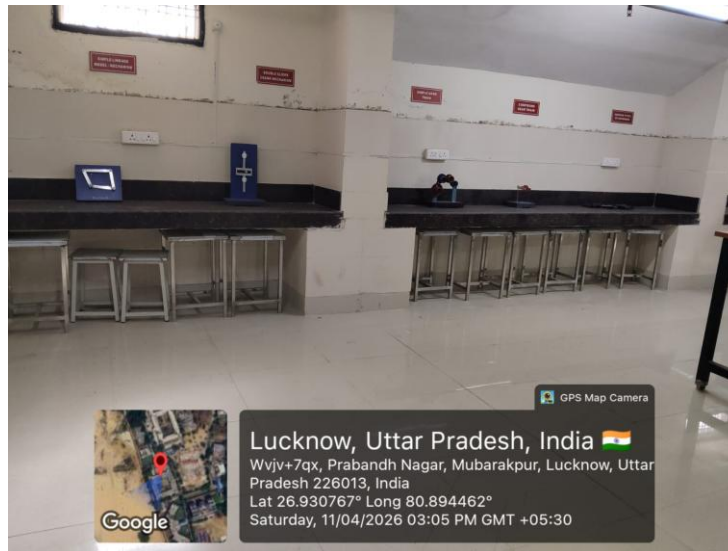
CONTROL SYSTEM LAB

The Control System Laboratory enables students to understand the behavior and performance of automatic control systems. Experiments are conducted on different control elements, controllers, and dynamic systems to study system stability, transient response, and feedback

mechanisms. The lab provides practical knowledge essential for designing and analyzing industrial automation systems.

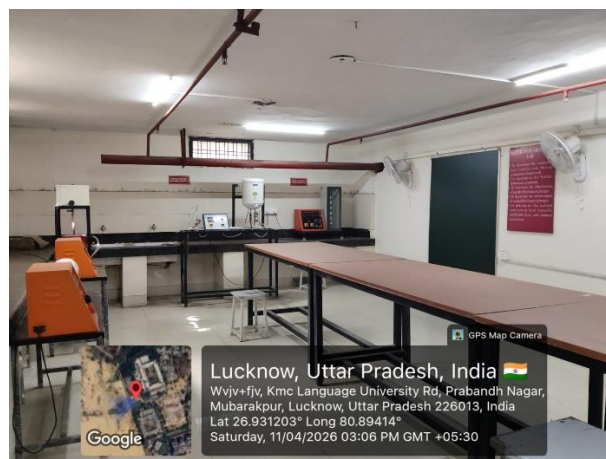
THEORY OF MACHINE LAB

The Theory of Machine Laboratory offers practical insights into the kinematics and dynamics of machines and mechanisms. Students perform experiments related to governors, gyroscopes, balancing of rotating masses, cams, and gear trains. The laboratory helps students understand the motion, forces, and energy transfer involved in mechanical systems.



HEAT & MASS TRANSFER LAB

The Heat and Mass Transfer Laboratory provides experimental understanding of the mechanisms of heat and mass transfer, including conduction, convection, radiation, and diffusion. Students investigate heat exchanger performance and various heat transfer equipment. The lab develops analytical and practical skills required for thermal system design and optimization.



IC ENGINE & AUTOMOBILE ENGINEERING LAB

The IC Engine and Automobile Engineering Laboratory focuses on the operation, performance, and testing of internal combustion engines and automotive systems. Students gain practical knowledge of engine components, fuel systems, emission characteristics, and vehicle mechanisms. The lab enhances understanding of engine performance evaluation and modern automotive technologies.

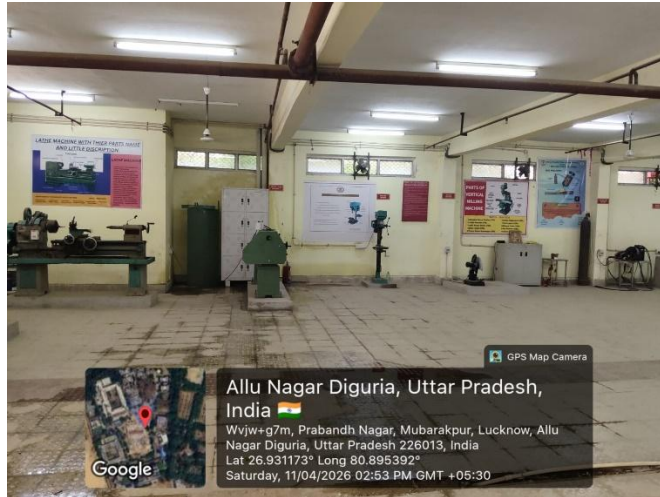


M.TECH - MECHATRONICS LAB

The M.Tech Mechatronics Laboratory integrates mechanical systems with electronics, control systems, and computer engineering. Students work on advanced technologies such as sensors, actuators, robotics, programmable logic controllers, and automated systems. The lab promotes interdisciplinary learning and encourages innovation in intelligent and automated engineering solutions.

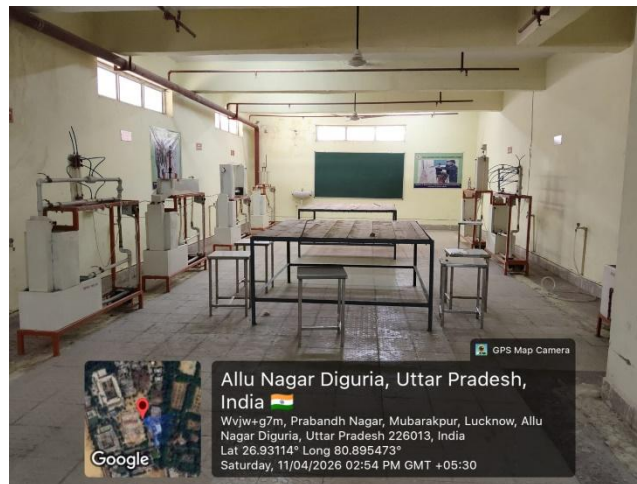
ENGINEERING WORKSHOP

The Engineering Workshop provides basic practical training in manufacturing and fabrication processes. Students acquire hands-on experience in fitting, carpentry, welding, machining, sheet metal work, and other workshop practices. The laboratory develops technical skills, craftsmanship, safety awareness, and an appreciation for engineering production techniques.



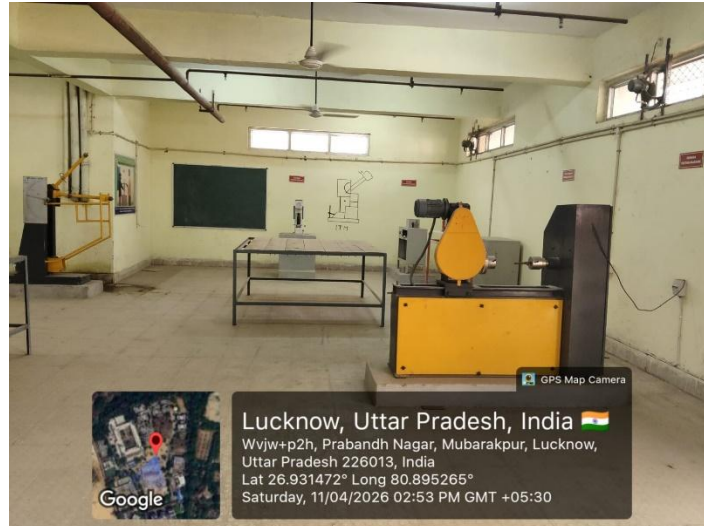
FLUID MECHANICS LAB

The Fluid Mechanics Laboratory enables students to understand the behavior of fluids under various conditions of flow and pressure. Experiments are conducted on fluid properties, flow measurement devices, hydraulic machines, and pipe systems. The lab strengthens conceptual understanding and develops practical skills related to fluid engineering applications.



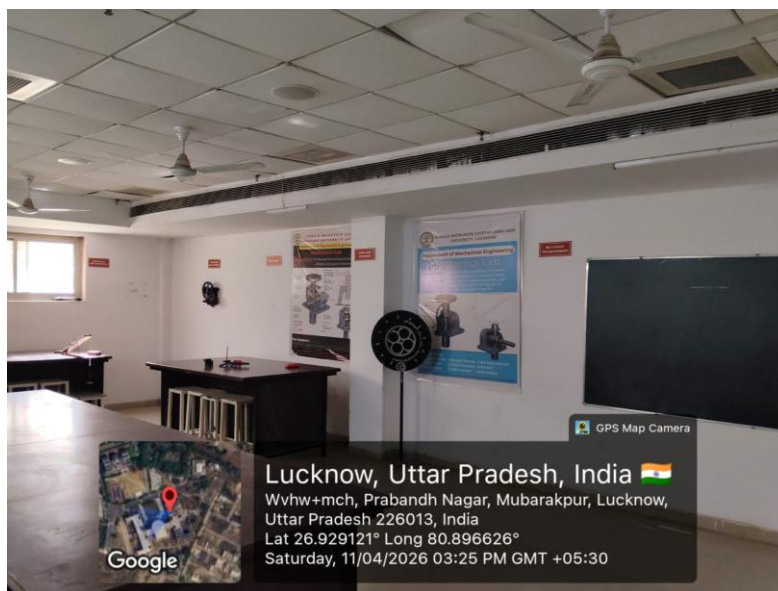
ENGINEERING MATERIALS LAB

The Engineering Materials Laboratory introduces students to the properties, structure, and behavior of various engineering materials. Students perform tests on metals, polymers, composites, and other materials to evaluate their mechanical and physical characteristics. The laboratory helps in selecting suitable materials for different engineering applications and manufacturing processes.



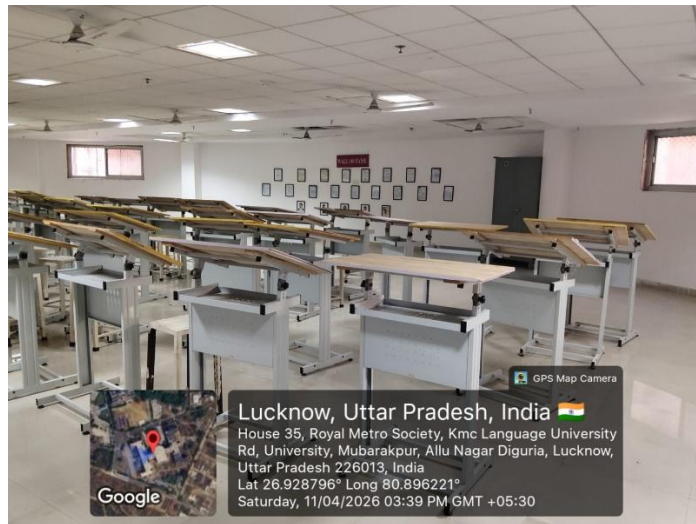
ENGINEERING MECHANICS LAB

The Engineering Mechanics Laboratory provides practical understanding of the fundamental principles of mechanics involving forces, equilibrium, friction, and motion. Students conduct experiments to analyze static and dynamic systems and validate theoretical concepts. The lab develops analytical thinking and problem-solving skills essential for engineering design and analysis.



ENGINEERING GRAPHICS LAB

The Engineering Graphics Laboratory develops students' abilities in technical drawing and graphical representation of engineering components. Students learn orthographic projections, isometric views, sectional drawings, and computer-aided drafting techniques. The lab enhances spatial visualization and communication skills necessary for engineering design and manufacturing.



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3D PRINTING LAB

The 3D Printing Laboratory provides students with practical exposure to additive manufacturing technologies and rapid prototyping techniques. Students learn digital modeling, slicing software, material selection, and the operation of 3D printers to fabricate engineering components and prototypes. The laboratory fosters creativity, innovation, and product development skills aligned with modern manufacturing practices.



FACILITIES- SMART CLASSROOM

The Mechanical Engineering Department is equipped with a Smart Classroom featuring an interactive Smart Board that enhances the teaching–learning process. The facility enables faculty members to deliver lectures using digital content, multimedia presentations, and real-time annotations. Students can also use the Smart Board to present seminars, project work, and technical presentations effectively. In addition, the Smart Classroom is utilized for software-based training and demonstrations of engineering applications such as SolidWorks, Fusion 360, AutoCAD, and other design and simulation tools, providing students with hands-on exposure to modern engineering technologies.

