ANJUMAN-I-ISLAM'S

M.H. SABOO SIDDIK POLYTECHNIC

MECHANICAL ENGINEERING

DESIGN • ANALYZE • BUILD • IMPROVE

MSBTE AFFILIATED

Everything that moves, works and makes life easier!

AICTE | DTE APPROVED

1. WHAT IS MECHANICAL ENGINEERING?

- The oldest and broadest branch of engineering.
- Involves designing, manufacturing, operating and maintaining machines and systems.
- From tiny gears to giant turbines – it's everywhere!

MECHANICAL ENGINEERING

A broad field that combines creativity, science and technology to solve real world problems.

2. CORE AREAS (WHAT YOU STUDY)

- **Thermodynamics** – Heat, energy and temperature
- **Mechanics** – Forces, motion and materials
- **Material Science** – Properties and selection of materials
- **Design & CAD** – Creating 2D/3D models and designs
- **Manufacturing** – Making products using machines and processes
- **Fluid Mechanics** – Behavior of liquids and gases
- **Control Systems** – Automation and smart systems

3. WHERE IS IT USED?



- Automobiles
- Aerospace
- Power Plants
- Robotics & Automation



- HVAC (Heating, Ventilation & Air Conditioning)
- Medical Devices



- Renewable Energy (Wind, Solar)
- Oil & Gas, Marine, Railways and many more!

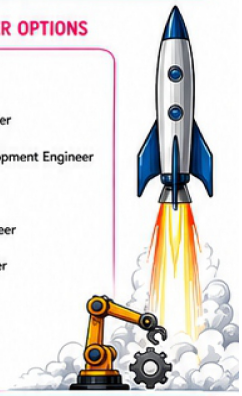
4. SKILLS YOU DEVELOP

- Problem Solving
- Analytical Thinking
- Creativity & Innovation
- Teamwork & Communication
- Project Management

If you are curious how things work and love to build, design and solve problems, **MECHANICAL ENGINEERING IS THE PERFECT CHOICE FOR YOU!**

5. CAREER OPTIONS

- Design Engineer
- Production Engineer
- Research & Development Engineer
- Thermal Engineer
- Automotive Engineer
- Aerospace Engineer
- Robotics Engineer
- Energy Engineer
- Entrepreneur



6. TOOLS & TECHNOLOGIES YOU WILL USE

- CAD Software (SolidWorks, AutoCAD)
- Simulation Tools (ANSYS, MATLAB)
- Manufacturing Machines (CNC, 3D Printing)
- IoT & Sensors
- Robotics & Automation Systems

7. WHY CHOOSE MECHANICAL ENGINEERING?

- Always in demand
- Wide range of career opportunities
- Work on real-world exciting projects
- Good salary & growth potential
- Chance to make a positive impact on the world

8. SPECIAL CAREER OPTIONS

High Demand – Great Opportunities!

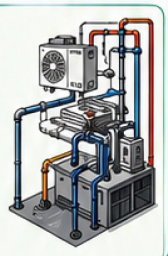
PIPING DESIGN ENGINEER (OIL & GAS SECTOR)

- Designs piping systems for oil & gas plants, refineries and offshore platforms
- Uses 3D CAD & standards (ASME, API)
- Ensures safety, efficiency and reliability



MEP ENGINEER (IN INDUSTRY)

- Works on Mechanical, Electrical & Plumbing systems in buildings and industries
- Involves HVAC, Fire Fighting, Plumbing, Electrical systems
- Key role in industrial plants, malls, hospitals, commercial buildings



CAREER PATH

Diploma in Mechanical Engineering (3 Years) → B.E./B.Tech in Mechanical Engineering (3 Years) → M.Tech / MBA (2 Years) → Ph.D. (3–5 Years)

Higher studies open doors to Teaching, Research & Advanced Careers.

AVERAGE STARTING SALARY (After Diploma)

₹ 2.4 LPA TO ₹ 6 LPA

PROMISING CAREER ROLES

- Piping Engineer (Oil & Gas Sector)
- Piping Design Engineer
- MEP Engineer (Industry)
- HVAC Engineer
- Automobile Engineer
- Aeronautical Engineer
- And many more...

TOP RECRUITERS

TATA, L&T, Mahindra, BHEL, SIEMENS, BMW, GE, Ford, CATERPILLAR, Shell

...and many more

TIP FOR SUCCESS

- Stay curious
- Keep learning
- Practice & build projects
- Never stop improving!

MACHINES MAY DO THE WORK, BUT MECHANICAL ENGINEERS MAKE IT POSSIBLE!

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