



**VNR VIGNANA JYOTHI INSTITUTE OF
ENGINEERING AND TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING**

SWOC ANALYSIS

Strengths

- Department has a dedicated faculty and more than 30% of them are holding PhD degrees in diversified specializations, and experienced supporting staff.
- Department is offering P.G programmes in Advanced Manufacturing Systems, CAD/CAM specializations.
- Faculty members have published significant number of research papers in national and international journals, conferences and workshops and completed research projects funded by AICTE, UGC and DRDO.
- Department is equipped with wide range of CAD/CAM software like CATIA, IRON CAD, IDEAS, ANSYS, AUTOCAD, GIBBS CAM, EDGE CAM, FLEXSIM etc. to cater to the UG/PG programmes for design, modeling and analysis of engineering products and research projects.
- Department has a digital library to support faculty and students to do projects and research by providing access to E-Journals, E-Books, text books and project reports.
- Department has latest 3-D Printers, 3-D scanner and Makerbot software for visualization and prototype development of products.
- A center of excellence for Joining Technology is established by the department with necessary infrastructure such as Metallurgical Microscope, Digital Ultrasonic Flaw Detector, Micro Vicker Hardness Tester along with Thermo-Calc and Mathematica software to conduct advanced research in joining technologies.
- Department has facilities to manufacture complex parts with CNC Lathes and CNC Milling machine apart from machine shop and workshop to carry out student and faculty research projects.

- Automation & Robotics Lab of the department is equipped with Pneumatic and Hydraulic Trainer kits, Industrial PLC and Microprocessor Trainer kits, 5-Axis Industrial Robot Arm Trainer and Robotic Simulation Software to cater to UG& PG programmes as well as student research projects.
- Department has adequate computational facilities and other software like Minitab, Matlab and image analysis for project and research work.

Weaknesses

- Adequate financial support is required to establish research facilities to conduct advanced research in areas such as Composite Materials, Bio-Materials, Bioinspired Materials, Subtractive and Additive Manufacturing, Data Mining in Manufacturing, Computational Fluid Dynamics etc by faculty members. The research facilities shall be established by the grants of funding agencies such as AICTE, UGC, DST etc subjected to the approval of project proposals and institutional funding.
- The interaction with local industries, higher learning institutions and research organizations need to be further developed to undertake collaborative research projects and for mutual benefit.

Opportunities

- To grow as a leading department at regional and national level by educating the students for their intellectual enrichment.
- To serve the local community and enterprises by offering technical solutions to their problems.
- To involve the students to carry out research projects in state-of-the-art technologies under supervision of experienced faculty members.
- Faculty members shall carry out research in cutting edge technologies making use of online access to e-Journals through digital library and laboratories equipped with sophisticated equipment and software.

Challenges

- To provide job opportunities to graduates of the department in reputed core companies by imparting adequate knowledge and employable skills.

- To establish research laboratories to enable the faculty members to conduct advanced research in upcoming technological areas.
- To upgrade the curriculum to meet the expectations and standards of the industry by introducing/updating courses and laboratories in latest technologies in mechanical engineering domain.
- To motivate and train the students to further their education in renowned academic institutions at national/international level by securing high GATE/GRE scores.
- To tie up with academies such as TASK (Telangana Academy for Skill and Knowledge) for enhancing employability of students by organizing skill development programmes in SAP software and certification programmes etc.
- To encourage the students to register for courses offered by other departments through CBCS (Choice Based Credit System) to do projects requiring interdisciplinary knowledge.