A Report on Industrial Visit to "Centum Electronic Limited, Bengaluru" Organized by Department of Computer Science & Engineering on 22.05.2026

Report Submitted by: Dr. G. Arun Kumar, Associate Professor, Department of Computer Science & Engineering
Faculty Members Visited: Dr. G. Arun Kumar, Associate Professor, Department of Computer Science & Engineering; Mrs. G. Vasundara Devi, Assistant Professor, Department of Computer Science & Engineering.
Total no. of Participants: 42
Mode of Conduct: Offline
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The Department of Computer Science and Engineering organized an industrial visit to the Centum Electronic Limited, Bengaluru for I B.Tech (CSE). A total of 40 students participated in the visit along with faculty coordinators Dr. G. Arun Kumar and Mrs. G. Vasundhara Devi The industrial visit to Centum Electronics Limited, Bengaluru, aims to provide students with practical exposure to advanced electronics manufacturing, aerospace and defence technologies, and industry-standard practices. The visit helps bridge the gap between academic learning and real-world applications by offering insights into product design, system integration, quality assurance, and innovation in high-reliability electronic systems.

About Centum Electronic Limited:

Centum Electronics Limited is a leading Indian Electronics System Design and Manufacturing (ESDM) company headquartered in Bengaluru. Founded in 1993–94, the company specializes in designing, developing, and manufacturing high-reliability electronic systems, subsystems, and components for aerospace, defense, space, industrial, medical, and communications sectors. It serves major organizations such as ISRO, DRDO, defense PSUs, and global aerospace companies. Centum has manufacturing facilities in India and international operations across Europe and North America. The company is recognized for its expertise in mission-critical electronics, avionics, power systems, radar, electronic warfare, and satellite applications.

Highlights of Products Built by Centum Electronics Limited

- **Aerospace & Space Electronics** – Designs and manufactures satellite electronics, onboard power systems, telemetry systems, and mission-critical modules used in space missions.
- **Defense Systems** – Develops electronic warfare systems, radar subsystems, communication systems, missile electronics, and battlefield support equipment.
- **Avionics Solutions** – Produces flight-control electronics, cockpit display systems, navigation modules, and aircraft communication equipment.
- **Power Electronics** – Manufactures high-reliability power supplies, power distribution units, battery management systems, and power converters for defense and industrial applications.
- **Radar & RF Systems** – Builds RF and microwave modules, radar transmit/receive units, signal processing systems, and antenna-related electronics.
- **Industrial Electronics** – Provides embedded systems, control units, and custom electronic assemblies for industrial automation and monitoring.
- **Medical Electronics** – Develops high-precision electronic assemblies and subsystems for healthcare and diagnostic equipment.
- **Electronics Manufacturing Services (EMS)** – Offers end-to-end PCB assembly, system integration, testing, prototyping, and product lifecycle management services for global customers.

About the Visit:

During the industrial visit to Centum Electronics Limited, Bengaluru, students were given an opportunity to observe the complete electronics manufacturing process followed in the company. Mr. Lakshmi Narayanan, Production Engineer, provided a detailed explanation of the production workflow, quality standards, and advanced technologies used in the organization.

He explained how electronic products for aerospace, defense, space, and industrial applications are designed, assembled, tested, and delivered to customers. The students gained valuable insights into the importance of precision, reliability, and quality control in the manufacturing of mission-critical electronic systems.

Key Highlights of the Visit

1. Introduction to the Electronics Manufacturing Process and Production Facilities.
2. Overview of Printed Circuit Board (PCB) Assembly using Surface Mount Technology (SMT).
3. Demonstration of Automated Pick-and-Place Machines for component placement.
4. Explanation of Solder Paste Printing and Reflow Soldering techniques.
5. Understanding of Through-Hole Component Assembly and Manual Soldering Processes.
6. Exposure to Quality Assurance Procedures and Inspection Standards.
7. Demonstration of Automated Optical Inspection (AOI) Systems for defect detection.
8. Understanding of Functional Testing and Reliability Testing of electronic products.
9. Insights into Aerospace and Defense Electronics Manufacturing Requirements.
10. Importance of Documentation, Traceability, and Process Control in production.
11. Discussion on Industry 4.0 practices and automation in modern manufacturing.
12. Interaction session on career opportunities and skill requirements in the electronics industry.

The visit provided practical exposure to industrial manufacturing practices and helped students understand how theoretical concepts learned in classrooms are applied in real-world electronics production environments. The interaction with Mr. Lakshmi Narayanan enabled students to gain valuable knowledge about production engineering, quality management, and advanced electronic system manufacturing.

Outcomes of Industrial Visit:

1. Gained practical exposure to advanced electronics manufacturing processes used in aerospace, defense, and industrial applications.
2. Developed an understanding of PCB assembly techniques, Surface Mount Technology (SMT), and automated production systems.
3. Learned about quality assurance, testing procedures, and industry standards followed in mission-critical electronic product development.
4. Acquired knowledge of modern manufacturing technologies, including automated inspection and process control systems.
5. Understood the importance of precision, reliability, documentation, and traceability in electronics production.
6. Enhanced awareness of career opportunities, technical skills, and industry expectations in the electronics and embedded systems sectors.
7. Bridged the gap between theoretical concepts studied in engineering courses and their practical implementation in a real industrial environment.

Special Thanks

We express our sincere gratitude to Mr. M. Vijay, HR Manager, Centum Electronics Limited, Bengaluru, for organizing and facilitating a smooth and informative industrial visit. His warm hospitality, excellent coordination, and continuous support throughout the visit made the experience highly valuable and memorable for all participants.
We would also like to extend our heartfelt thanks to him and the entire Centum Electronics team for providing a wonderful lunch and ensuring the comfort and well-being of all students and faculty members. Their generous support, guidance, and hospitality greatly contributed to the success of this industrial visit.