



ANNAMACHARYA UNIVERSITY

EXCELLANCE IN EDUCATION; SERVICE TO SOCIETY
(ESTD UNDER AP PRIVATE UNIVERSITIES (ESTABLISHMENT AND REGULATION) ACT, 2016)
RAJAMPET, Annamayya District, AP – 516126, INDIA

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING INDUSTRIAL VISIT REPORT

Visit to Vikram Sarabhai Space Centre (VSSC), Thumba, Thiruvananthapuram, Kerala

Institution	Annamacharya University, Rajampet, Annamayya District, Andhra Pradesh - 516126
Department	Department of Electronics and Communication Engineering
Programme	III B.Tech. ECE Industrial Visit
Place of Visit	Vikram Sarabhai Space Centre (VSSC), Thumba, Thiruvananthapuram, Kerala
Visit Schedule	Departure from college on 05-04-2026 at 05:00 PM; VSSC visit on 06-04-2026; return to campus on 08-04-2026 at 05:00 AM
Faculty and Students	170 Students and 9 Faculty members

1. Introduction

The Department of Electronics and Communication Engineering, Annamacharya University, organized an industrial visit to Vikram Sarabhai Space Centre (VSSC), Thumba, Thiruvananthapuram, Kerala, for III B.Tech. ECE students to provide academic and industrial exposure to one of India's premier space research centres. The visit was intended to help students observe the working environment of a high-technology institution and understand the practical relevance of engineering concepts in real applications.

2. Objectives of the Visit

- To understand the significance of VSSC in India's space missions and launch vehicle development.
- To expose students to aerospace exhibits, institutional discipline, and scientific infrastructure.
- To relate theoretical subjects in Electronics and Communication Engineering to practical systems used in advanced technology environments.
- To motivate students toward higher studies, innovation, and professional careers in research and development.

3. Tour Schedule Summary

According to the submitted route plan, the tour commenced from the college campus on 05-04-2026 at 05:00 PM. The travel route included Coimbatore, Thrissur, Kochi, Thiruvananthapuram, Kovalam, Suchindram, Kanyakumari, and Madurai, with the industrial visit to VSSC scheduled on 06-04-2026. The team returned to the college campus on 08-04-2026 at 05:00 AM after completing the educational tour.



Rocket Models and Campus View

During our industrial visit to VSSC, all the students were given an opportunity to explore various advanced technologies related to space research and satellite launch systems. The visit was highly informative and provided practical exposure beyond classroom learning.

1. Visit to Rocket Engine Sections

Students observed different types of rocket engines used in launch vehicles. These included:

- Solid propulsion systems
- Liquid propulsion engines
- Cryogenic engines

We learned how these engines generate thrust and how different stages of rockets work together to launch satellites into space. The working principles of propulsion, fuel types, and efficiency were clearly explained by the experts.



Space Shuttle Model Display

2. Exposure to Radar Systems

Students also visited radar-related sections where different tracking and communication systems were demonstrated. These radars are used for:

- Tracking launch vehicles
- Monitoring flight trajectory
- Ensuring safety and accuracy during launches

We understood how radar technology plays a crucial role in space missions by providing real-time data and communication.



VSSC Entrance Welcome Board

3. Documentation on Evolution of VSSC

At the end of the visit, a detailed presentation/documentation session was conducted about the history and growth of VSSC. Key points included:

- Establishment under the leadership of Vikram Sarabhai
- Initial sounding rocket experiments
- Development of launch vehicles like SLV, PSLV, and GSLV
- Expansion into advanced space research and indigenous technology development

This session gave us a clear understanding of how India progressed from basic experiments to becoming a major space power.



Faculty interaction and certificate exchange

Usefulness of the Visit to Students

This visit was highly beneficial for all students in the following ways:

- **Practical Knowledge:**
Students gained real-time understanding of concepts like propulsion, radar systems, and satellite launching which are otherwise studied theoretically.
- **Industry Exposure:**
It helped students understand how engineering concepts are applied in real-world space research organizations.
- **Career Inspiration:**
The visit motivated students to pursue careers in organizations like Indian Space Research Organization (ISRO).
- **Technical Awareness:**
Students became aware of advanced technologies used in aerospace and communication systems.
- **Research Orientation:**
The visit encouraged interest in innovation, research, and development in the field of electronics, communication, and aerospace engineering.
- **Introduction to Launch Vehicle Systems:**
Students were given an overview of different launch vehicles developed at VSSC, such as PSLV and GSLV, including their multi-stage structure and mission objectives.
- **Detailed Study of Rocket Propulsion:**
The working of solid, liquid, and cryogenic engines was explained with emphasis on thrust generation, combustion process, and stage separation techniques



Group photo at church premises

4. Visit Highlights

During the visit, students observed launch vehicle models, a space shuttle display, institutional campus features, and formal entry areas associated with the VSSC campus. These observations provided practical insight into space science infrastructure and created a meaningful connection between classroom concepts and advanced technological systems.



Students at VSSC Entrance (Canal Gate)

- **Understanding of Structural Design:**

Students observed models and components of rocket structures, learning about lightweight materials, thermal protection systems, and aerodynamic design considerations.

- **Radar and Tracking Systems:**

Demonstrations were provided on how radar systems track the launch vehicle, calculate velocity, altitude, and ensure accurate navigation during flight.

- **Telemetry and Communication Systems:**

Students learned how data from rockets is transmitted to ground stations in real-time for monitoring and control purposes.

- **Simulation and Control Mechanisms:**

Exposure to simulation techniques used for testing rocket performance before actual launch helped students understand system reliability and safety measures.

- **Quality Testing and Safety Measures:**

Insights were given into rigorous testing procedures followed to ensure reliability, including vibration testing, thermal testing, and failure analysis.

- **Integration and Assembly Process:**

The process of assembling different rocket stages and integrating subsystems was explained, highlighting precision and coordination required in space missions.

- **Historical Evolution and Achievements:**

A detailed session covered the growth of VSSC from early sounding rockets to advanced launch vehicles, showcasing India's progress in space technology.

- **Interaction with Scientists/Engineers:**

Students had the opportunity to interact with experts, ask questions, and gain insights into real-world challenges and innovations in space research.

- **Exposure to Research and Development Activities:**

The visit highlighted ongoing R&D efforts in propulsion systems, reusable launch vehicles, and future space missions.



Group Photo at VSSC with faculty

5. Learning Outcomes

The visit enhanced students' understanding of launch vehicle systems, interdisciplinary engineering integration, research culture, and the importance of precision in scientific institutions. For Electronics and Communication Engineering students, the experience was particularly useful in relating communication systems, embedded systems, instrumentation, control, and reliability engineering to aerospace applications.

6. Travel and Participation Details

Travel Agency	Sri Bhagavan Tours and Travels, Rly Kodur, Tirupathi (Dt.), A.P.
Travel Agent	E. Bhakthavasalam, Mobile: 9440941988
Transport Arrangement	4 non-A/C buses, 45 seating capacity per bus, 2 drivers per bus
Student Strength	170 students
Faculty Strength	9 Faculty members

7. Visit Schedule/Route Map

Date	Time	From	To	Activity	Stay/Halt
04-03-2026	05:00 PM	College Campus	—	Departure	—
04-03-2026	Night	—	—	Journey	Bus
05-03-2026	06:00 to 07:00 AM	—	Coimbatore	Arrival & Fresh Up	Halt
05-03-2026	07:30 to 10:00 AM	Coimbatore	Isha Foundation	Breakfast & Visit	Halt
05-03-2026	10:00 AM	Coimbatore	—	Departure	—
05-03-2026	01:00 PM	—	Thrissur	Lunch	Halt
05-03-2026	02:00 PM	Thrissur	—	Departure	—
05-03-2026	05:00 PM	—	Kochi	Tea & Snacks	Halt
05-03-2026	05:30 PM	Kochi	—	Departure	—
05-03-2026	11:00 PM	—	Thiruvananthapuram	Arrival	Night Stay (Hotel Star)
06-03-2026	07:00 AM	Hotel	—	Breakfast	—
06-03-2026	08:00 AM	Hotel	VSSC (09:00AM)	Reporting	—
06-03-2026	09:00AM	VSSC	—	Industrial Visit	—
06-03-2026	01:30 PM	VSSC	—	Departure	—
06-03-2026	02:00 PM	—	Kovalam	Lunch	Halt
06-03-2026	03:00 PM	Kovalam	—	Departure	—
06-03-2026	05:30 PM	—	Suchindram	Tea Break	Halt
06-03-2026	06:00 PM	Suchindram	—	Departure	—
06-03-2026	07:00 PM	—	Kanyakumari	Arrival	Night Stay (Hotel Triveni)
07-03-2026	09:00 AM	Kanyakumari	—	Departure	—
07-03-2026	01:00 PM	Highway	—	Lunch	Halt
07-03-2026	06:00 PM	—	Madurai	Tea & Snacks	Halt
07-03-2026	07:00 PM	Madurai	—	Departure	—
08-03-2026	05:00 AM	—	College Campus	Arrival	Tour Ends

8. Conclusion

The industrial visit to Vikram Sarabhai Space Centre was highly informative and academically enriching. It provided students of Annamacharya University with direct exposure to the environment of a nationally important research institution and strengthened their understanding of the practical relevance of engineering education. The visit also encouraged professional motivation, teamwork, and interest in advanced technological careers.

9. Submission Signatures

Prepared By	Faculty Coordinator	Head of Department
Mr.K.M.D.Rajesh babu	Mr.K.M.D.Rajesh babu	Dr.J.Chinna babu