

Industrial Visit at INS Valsura, Jamnagar

Organized By

Department of Electronics & Communication Engineering
Marwadi Education Foundation, Rajkot

Under the Guidance of

Dr. Rajendrakumar D. Patel (Head, Associate Professor, ECE)

Mr. Nilesh D. Makwana (Assistant Professor, ECE)

Mr. Satishkumar D. Baldaniya (Lab Assistant, ECE)

(10th September, 2016)

INS Valsura located on Rozi island in gulf of kutch 5 km from Jamnagar. INS Valsura was commissioned on 15th December, 1942 by colonel Digvijay Singhji, The Jamsaheb of Nawanagar as the torpedo training school to counter the menace created by the German U-boats to allied shipping during World War II.

We reached at INS Valsura, Jamnagar around 9 AM. In INS Valsura there are mainly 5 departments for educational training and they are calling them schools.

- 1) Electronics and communication school
- 2) Information technology school
- 3) Basic electrical school
- 4) Electrical school
- 5) Electrical equipment school

We start our visit from “**Electronics and Communication School**” and our instructor for this school is Mr. Munish k. Singh. We visited *MICROWAVE LAB*, in that instructor gave us knowledge about the micro strip antenna and its working how to measure the different parameter of antenna with the help of network analyser. Then we went to *RADARATORY LAB* in that instructor gives us deep knowledge with hands-on on Radar and its working with device power supply, DSP, MIT-digital processor. Basically there are three types of

radar in that Laboratory (i) Surveillance radar (ii) Navigation radar (iii) Tracking radar. Then we show a noise graph on Rotating Antenna Pedestal for RADAR and cost of that lab setup is around 1.7 cr. Then we went to *SONAR LAB*, where we do the practical on SONAR trainer kit which works on 8-10 KHZ, SONAR lab setup cost is 95 lakhs. Instructor also teach us difference between active and passive Hydrophone. Then we went to *EMIEMC LAB* in that we learn about spectrum analyser and its working how it generates a spike on TESLA EMI generator. Then we move towards *FIBER OPTICS LAB*, in that laboratory most of the set ups are made in Israel. In this laboratory we learn about ribbon cable, OFC fiber, SC-FC fiber, MTRI fiber, LC-FC fiber, APC E-2000, Fusan Implosion. Then we visited *SIGNAL PROCESSING LAB*, in that we get to know about oscilloscope and logical analyser and its application and working. Inside this lab they are using MATLAB software for Image Processing and also in that lab they are working on embedded platform.

Then we visited second school i.e. **“Information and Technology School”** for this school our instructor is Mr. Durdarshan Singh. In that first we went to *SOFTWARE DEVOLAPMENT CENTER OF VALSURA* and instructor saw Cisco UCS server room which have 4 blades having 36 GB storage and 128 GB RAM. Than sir brief about Indian navy websites like UND (network unified department), E-Gurukul, Online feedback for ship, Office automation. Then we went to *LINUX LAB* which is also called language lab like virtual classroom or state of art classroom. INS Valsura itself design very high Secure domain to secure confidential data. Then we went to ESI LAB , ESI stands for embedded simulation and interfacing. In which we learn about how to assemble PCs and laptops.

Then we went to Third school of our visit i.e. **“Electrical Technology School”**. First we went to *ELECTRICAL MACHINE TUTORIAL LAB* in that we saw the different kind of trainer kit such as (1) 3-phase motor (2) Earth fault testing trainer (3) Fire alarm trainer (4) Meter panel (5) House/commercial wiring in trainer (6) 3-phase induction motor speed control trainer (7) Transformer trainer (8) AC & DC starter demonstrator (9) Electrical machine trainer. Then we went to *APMS LAB* and saw SAM-401 kit which have 4 generator. This kit can be used for various purpose and for that they have different card such as PLC (Process Monitoring and Control System) card, interfacing card etc. In that if any fault is generated than alarm will start beeping and get a message ‘fail’ on the SAM. Then we went to *INTEGRATED INOVATION LAB* in that there are many electric meter which are as follows (1) Tong Tester/Comp Meter (2) CE Training Centre (3) Megger meter (4) Electric Motor Checker (5) SPM (Shock Pulse Generator) (6) LCR ‘Q’ meter (7) Cable

fault locator. Then we saw the e-bike cycle and it's working, with full battery charge it will run for 30 km with the speed of around 20-30 km/hours.

Then we went to *LACTURE ROOM* and saw the short film based on life of Indian navy. How the SPARKS face all the challenges where SPARKS are trained Indian navy officers.

Then we went to “HYDROLIK LAB” and learn about various hydraulic trainer kit. Hydraulic trainer kit is they used oil as a liquid to control 4/3 direction, we also learn about PLC (Programmable Logic Circuit) control.

At the end our journey at INS Valsura end with *Museum* with High Tea. Instructor explained about history of INS Valsura. We also saw a Geodesic Dom Tree and it is really innovative idea to remember all the officers who get their degree form INS Valsura. We saw the real missiles used by Indian navy like Surface to air missile, Surface to air missile Sea cat, Surface to air missile RZ C1. We also saw the vacuum tubes which are earlier used for the amplification purpose, and nowadays we replace it by transistors.

Apart from this INS Valsura have its own medical facilities known as “SICK BAY”, school and very rich library.

Our all experience at INS Valsura is very good and we had very good exposure of latest technologies used in defence, with that we leave form the INS Valsura and reach to Rajkot around 4 PM.

Coordinator
Prof. Nilesh D. Makwana
(Assistant Professor, ECE Department)

Glimpse of the visit :

