



# GUJARAT TECHNOLOGICAL UNIVERSITY'S



INTERNATIONAL EXPERIENCE PROGRAM 2018

AT

HOCHSCHULE WISMAR UNIVERSITY, GERMANY



## **DISCIPLINES:**

ELECTRONICS AND COMMUNICATION ENGINEERING,  
ELECTRICAL ENGINEERING

## **SUBJECTS:**

DIGITAL SIGNAL PROCESSING  
WIRELESS COMMUNICATION/ TESTING AND COMMISSIONING OF  
ELECTRICAL EQUIPMENTS

Internationalisation of Education is the need of the hour in this globalising world. To contribute towards this Gujarat Technical University has initiated International Experience Programme whereby students from various Courses like Engineering, Pharmacy, Management, and Architecture are sent to various foreign universities to get an international education and cultural exposure. A team of 31 students from Electrical and EC branch from various colleges affiliated to GTU visited the University of Wismar, Germany under this programme.

At the University of Wismar, the tradition of engineering education began in 1908 with the founding of the "Ingenieur-Akademie Wismar". For more than 100 years, Wismar has been a place of practical engineering education, today united under the umbrella of the Faculty of Engineering, Civil Engineering, Electrical Engineering & Computer Science, Mechanical Engineering / Process & Environmental Engineering in Wismar and Malchow on Poel and Maritime in Rostock Warnemünde includes.

### **Report of 1<sup>st</sup> and 2<sup>nd</sup> week i.e. 16<sup>th</sup> June to 29<sup>th</sup> July**

The journey began at 1 o'clock in the morning with 25 students and their mentor Prof. Dwipal Kadia from Sardar Vallabhbhai Patel International Airport, Ahmedabad. The students were very excited for the flight and after a nice group photo they went through security checks. The entire immigration and security checks went smoothly thanks to the Emirates staff and our



*Group Photo at Sardar Vallabhbhai Patel International Airport*

mentor. Due to delay in visa process 6 students joined the team after a week.

The flight was on time at both location i.e. from Ahmedabad and from Dubai. There was a 3 hour halt at Dubai Airport during which time all students refreshed and visited the Dubai airport mall. It was observed by all students and mentor the facilities and services by the Emirates Airlines was excellent and the staff were very helpful. The on-board technologies were a point of interest to the engineering students.

Students reached at Hamburg Airport 1:30 PM local time and once again the immigration process went smoothly. The pickup bus was half an hour late due to traffic issue. Meanwhile all students exchanged their currencies and contacted home. Once the bus arrived students loaded the luggage and were out of Hamburg in no time. It took approximately 2 hours to reach Wismar.



*Arrival at Hamburg Airport*

Upon arrival team were welcomed by Dr. Jelena Zascerincka. A brief guidelines and instructions was given and room keys were distributed.



*Student Dormitory at Wismar*

The hostel has 2 wings A and B with 5 stories each. Each floor contains 2 corridors on either sides. Two rooms had shared bath and there was a kitchen shared between four rooms. Except from few rooms all other rooms were shared by other foreign students studying at University of Wismar.



*Dormitory Corridors and Balcony*

This gave a good exposure to the students to know the culture of many other countries apart from Germany. All kitchens were well equipped with basic utensils, electric stove and refrigerators. This was quiet convenient for all international students.



*Kitchen*



*Room View Student Dormitory Wismar*

The following two days were free for students to get comfortable with the conditions and accommodate themselves to the new place. These two days had been amazing for the students as they explored the Wismar City and found out different Heritage sites. Wismar is a UNESCO World Heritage Site and it consists of different churches, monuments and ports made in early 19th century and before.



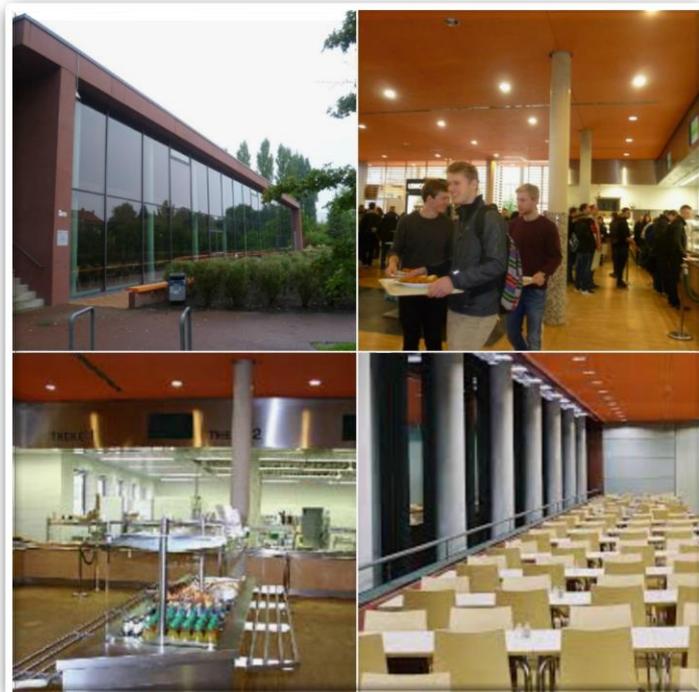
*Wismar City Attractions*

On 18th June 2018 lectures began at 9:15 am with an orientation of the entire summer school program by Prof. Dr.-Ing.habil. Andreas Ahrens. Orientation was followed by a tour of the whole college and the college canteen where affordable food were available for the students to eat both vegetarian and non-vegetarian.



*Wismar University*

Students in the first 10 days were taught the subject of Digital Signal Processing followed by an internal exam and then the final exam. Daily schedule consists of 90 minutes of theory session by Prof. Ahrens and 2 lab session each of 90 minutes by Dipl.-Ing.Ralph Bornitz and Dipl.-Ing.Uwe Starke. Lab sessions consisted of Matlab sessions and practical with Network Analyzer and oscilloscopes.



*Canteen Wismar University*

During these days, students visited various places nearby to the hostel - a supermarket Netto, is located near to the hostel, wherein students were able to purchase their daily grocery. REWE, Red Netto, ALDI, LIDL are also within two kilometre distance. During weekends student groups visited Berlin-the capital city, Hamburg- the port city, Rostock, Schwerin, and other places. On 24<sup>th</sup> June rest of the six students whose visa was delayed joined the group. The following day team had the official group photo with Prof. Ahrens on the central garden of the University.



*Group Photo at Wismar University*

### **Report of 3<sup>rd</sup> week i.e. 2<sup>nd</sup> July to 8<sup>th</sup> July**

On July 2nd 2018, students were taken on a tour of the manufacturing unit of Volkswagen group at Wolfsburg which is the biggest manufacturing unit of the Europe which was established on 26 May 1938. During the World War 2 the factory was used to make military equipment. After the destruction during the World War 2, the reconstruction of the factory began in 1945 under British government.

The Volkswagen Group comprises twelve brands from seven European countries: Volkswagen Passenger Cars, Audi, SEAT, SKODA, Bentley, Bugatti, Lamborghini, Porsche, Ducati, Volkswagen Commercial Vehicles, Scania and MAN. In addition, the Volkswagen Group offers a wide range of financial services, including dealer and customer financing, leasing, banking and insurance activities, and fleet management.

Our tour guide was Hassan Bedzoro from Mombasa, Kenya. Students were taken on a one hour tour to the whole unit preceded by a 17 minute short film about Volkswagen group. The unit is one of the most automated unit of Volkswagen which uses robots made in Japan and Russia for making cars. Automation ratio is 90% in Wolfsburg unit. The capacity of plant is approx. 3800 vehicles daily. Total employees works in Wolfsburg approx.



*Volkswagen Plant – Wolfsburg Germany*



*Volkswagen Headquarter - Wolfsburg Germany*

50,000 in different shifts. Plant area of plant is 6.57 square kilometres and road network is 75 kilometres.

Our tour included Press shop, Body shop, Paint Shop, Assembly line, Test rigs, Logistics. Our tour was arranged in special type of tour car. Car model produce in Wolfsburg unit are Volkswagen Golf, Volkswagen Golf Sports van, Volkswagen Golf R, Volkswagen Golf GTI, Volkswagen Golf GTE, Volkswagen e-Golf, Volkswagen Touran, Volkswagen Tiguan. After completion of tour team have group photo at outside the main building. At 3.30 PM students left the Volkswagen plant and went to the MacDonald for a lunch.



*The Tour Train pulled by a normal Golf GTI with a wagon with 30 person capacity.*



*Group Photo at Volkswagen - Wolfsburg Germany*

## Poland Excursion:

On 3rd July, 8:45 in morning team started their journey from Wismar by bus. The trip for Poland excursion was organized by Prof. Nobert Grunwald, Dr.Yelena Zascerincka, Ms. Maggie Zakrzewska and mentor Prof. Dwipal Kadia. According to German laws team have to take halt every 2 hours at Gas Station, where students could get refresh and also refuelling of the bus.



*Team on the way to Poland*

It took us more time than scheduled for reaching the Poland due to road construction work. At 1:45 pm team reached Szczecin, Poland. There they were divided into group of 4 students and room keys were given to us. Students went to their rooms and made lunch. After that mentor provided them a tram ticket for two days and they have free time for that day.



*Student Dormitory Szczecin Poland*

**Szczecin** (German: Stettin) known also by other alternative names is the capital and largest city of the West Pomeranian Voivodeship in Poland. Located near the Baltic Sea and the German border, it is a major seaport and Poland's seventh-largest city.



*Aerial view of the city Szczecin (Stettin) Poland*

### **Gdansk City:**

On second day, 4th July at 5 o'clock team departed for Gdansk city of Poland. It is around 350 KM far. It took around 7 hours to reach there. Team divided in groups and started exploring the city as per their choice. The city was destroyed 98% in World War 2 by German army. All the old monuments and buildings survived in World War 2 are now under UNESCO's Protection as World Heritage



*Attractions at Gdansk Poland*

Sites. The main attractions are St. Mary's Church, St. Nicolas' Church, Poland' oldest Bear brewery, World War 2 museum, Port, Socialist Revolution Museum, etc. At 7 o'clock team left the city and back to Szczecin.

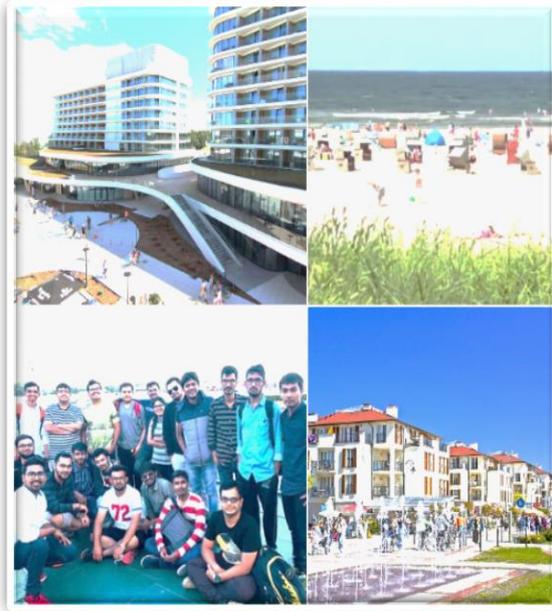
### **Swinemünde:**

On third day, 5th July due to unforeseen reason journey was delayed by half an hour and team started journey at 11:30 am. Firstly students went to the University of Szczecin. There was a presentation by Ms. Meggi about management stream and international collaboration for doing MBA at University of Szczecin. In that students were also explained the importance of social capital and importance of engineer subject is economic. After that team departed for Swinoujście (Swinemünde) where they reached there at 2:30 pm.



*University of Swinemünde (Swinemünde)*

Świnoujście (German: Swinemünde) both names meaning Świna mouth is a city and seaport on the Baltic Sea and Szczecin Lagoon, located in the extreme north-west of Poland. It is situated mainly on the islands of Usedom and Wolin, but also occupies smaller islands, of which the largest is Karsibór island, once part of Usedom, now separated by the Piast Canal (formerly the Kaiserfahrt) dug in the late 19th century to facilitate ship access to Szczecin (Stettin).



*Attractions at Swinemünde*

After reaching there, students were guided by Ms. Meggi to go MOLO restaurant team were taken to the Swinoujście island by ferry service. After that team had a free time to enjoy beach environment and for swimming. At sharp 7 PM team started their journey back to Szczecin.

### **Bollywood Restaurant:**

On fourth day, 6th July, students went for shopping. At 12 noon, Students checked out from the dormitory and started their journey toward Wismar. Before that team were taken to famous INDIAN restaurant in Szczecin named Bollywood Street. Owner of that restaurant is sister of well-known actress Rati Agnihotri. There team enjoyed delicious Indian food and after capturing group photo there team departed for Wismar.



*Team at Bollywood restaurant Szczecin - Poland*

### **Report of week 4 (i.e. from 9<sup>th</sup> to 15<sup>th</sup> July**

Fourth week began with students separating according to their branches. The 19 Electrical students started on Testing and Commissioning of Electrical Equipment subject whereas 12 EC students started Wireless Communication subject.

Prof. Ahrens introduced Electrical students to Prof. Cesar Benavente who is a visiting faculty for this IEP summer program from University of Madrid, Spain. After that both professors guided and briefed about their respective subjects.

The EC students followed same routine of lecture and lab as before whereas Electrical students followed system of Lectures, video-lectures and online test.

The first day of the week i.e 9th July team met Mayor of Wismar, Thomas Beyer. There was a brief video regarding development of Wismar City over the years in various industries namely Wood export, Shipbuilding, Logistics thorough port etc. The mayor and his assistant then gave us a brief welcome speech followed by Q&A session. There was also a group photo of students with the Mayor.



*Team at Mayor House - Wismar Germany*

On the second day i.e. 10th July team had one day tour to Hamburg. It took approximately 2 hours to reach there.

Hamburg, officially the Free and Hanseatic City, Hamburg is the second-largest city of Germany as well as one of the country's 16 constituent states, with a population of roughly 1.8 million people. Situated on the river Elbe, Hamburg is home to Europe's second-largest port and a broad corporate base.

Firstly team visited a super structure ELBPHILHARMONIE building. Students took an entry ticket provided by Prof. Grunwald and visited building.



*Elbphilharmonie - (concert hall in the Hafen City Hamburg)*

After that team joined by a guide for the tour in the bus who gave them the detailed tour of Hamburg. Firstly she took us to the church of St Michaelis established in 1685. After that team had around 2 hours trip in the city. Finally students were given 3 hour free time in Hamburg during which students went to different localities in the city as per their choice like Shopping centre, nearby landmarks and Gurdwara.



*St. Michael's Church Hamburg*



*Places of interest Hamburg*

On the third day (**11th July**) students had a sailing tour in a 17th Century Poeler Kogge-**WISSEMARA**. The ship was based on the design of a wreck found nearby and was built from scratch from 2001 to 2006. The tour started at sharp 6:30 PM , it was of 3 hour of which it took 1 hour to go into the sea by diesel engine and 2 hours to return back by sail. On the mid-way the main attraction of the ship a small cannon was fired. Students were offered a soup and any 2 drinks of their choice on the ship. The tour ended by all muscled boys pulling up the sails as per captain's order.



*Kogge Wissemara*



*Group photo on the ship Kogge Wissemara*

The fourth day **12th July** team visited Solarzentrum, a 100% eco-friendly, futuristic, fully automatic running on total renewable sources of energy. The house was entirely built by Dr.-Ing. Ditmar Schmidt and his wife.

The listed manor house estate in Wietow has a long and varied history. At least two sagas stretch back to the middle ages. For many years after 1945, the manor housed numerous families. The consequences of this were many adventurous structural changes installations, reconstructions, room divisions, dropped ceilings, built in sanitation fixtures, kitchens and chimneys.



*Green House at Solar Centre*

The intention of the owner and project developer of the Solar Initiative Mecklenburg-Vorpommern project is to demonstrate how to apply solar refurbishing to properties under a preservation order and to encourage others to do the same. It has been proved that



*Solar Panels at Solar Centre*

there is no contradiction between the protection of historical monuments and the application of solar technology in refurbishing old buildings. Solar refurbishing is sustainable refurbishing. It includes the passive and active usage of solar energy and it allows energy belt-tightening along with the

implementation of ecological building materials and an intelligent water utilization concept.



*Team visited Solar centre Germany*

### **Report of 5<sup>th</sup> week i.e. 16<sup>th</sup> July to 23<sup>rd</sup> July**

Team's Last week in Germany started with the briefing about them regarding the final examination, also they were guided for problem based learning by Prof. Cesar Benaventa. On Monday i.e. 16<sup>th</sup> July after completion of students teaching hours one more industrial visit was organised for them which was wood processing company **Egger** which is situated in same city Wismar.



*Group photo at Egger*

EGGER is a global family company founded in 1961 in Tyrol, Austria (where its headquarters are held) that produces wood-based panel Products. EGGER is represented by 17 production sites in Europe (Austria, Germany, France, United Kingdom, Romania, Russia and Turkey) and currently has 24 sales offices worldwide (France, Belgium, Denmark, Italy, Switzerland, Slovenia, Lithuania, Ukraine, China, Japan, India, Chile, Australia, Romania, Croatia, Czech Republic, Hungary, Poland, Serbia, Bulgaria, Turkey, Russia, Belarus and Argentina).

Entire tour was guided by representative from the company she guided us for around 2 hours during which she gave them information about different wood processing units in the plant. Students were impress by robotic technology used by German company. At the end of the tour mobile Head phone was given as a souvenir to all members of team by Egger representatives.

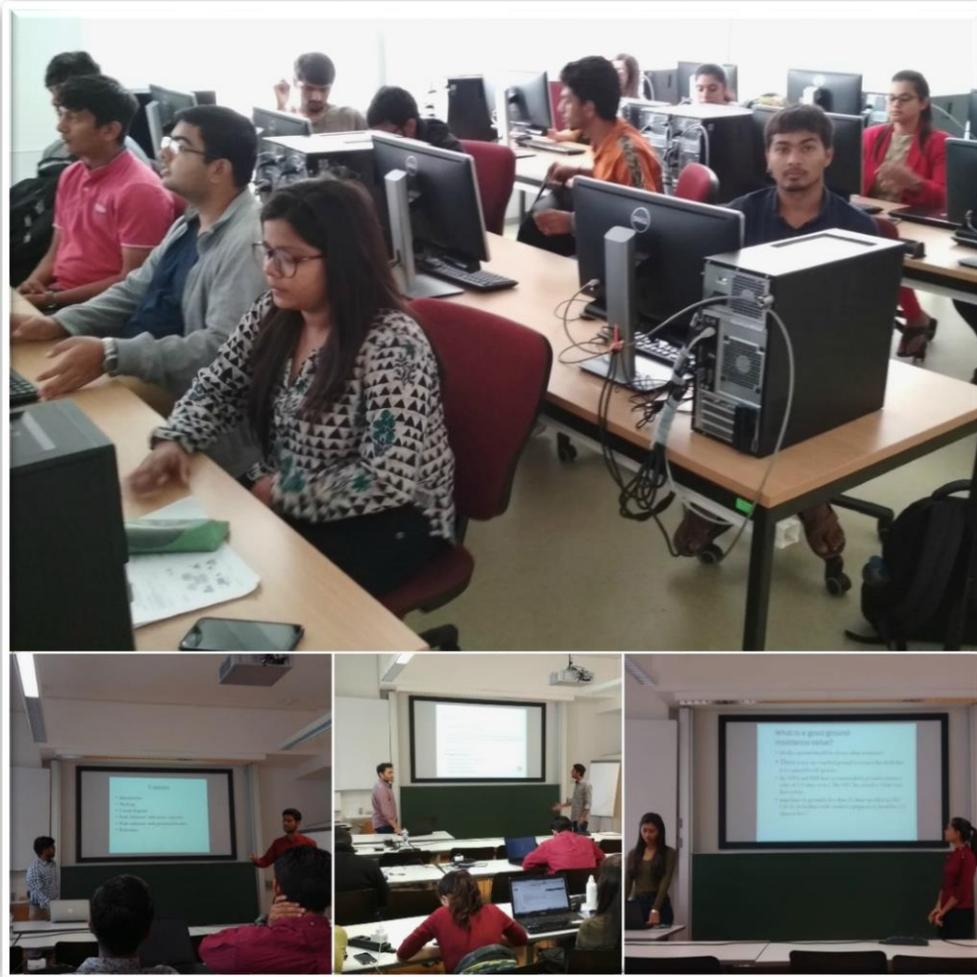
On Wednesday i.e. 18 July evening Prof. Nobert Grunwald and his team organised farewell party cum Dinner for the students at “**Mirchi**” restaurant, known for serving delicious India food in Wismar, Germany. Students enjoyed the mouth-watering Punjabi food severed by the restaurant. At the farewell party all students became emotional as they had few days left in Germany.



*Students in traditional wear at Mirchi restaurant Wismar*

On Wednesday Electrical group had a presentation in their class, topics were suggested by Prof. Cesar Benaventa. Students were ask to prepare

presentation in group of two, they were given 10 minutes to present their topic followed by question and answer session.



*Presentation by students at Wismar University*

Next day i.e. 20<sup>th</sup> July Friday all students had final exam of their respective subject. Electrical students had online examinations whereas EC students



*Students during their final exam at Wismar University*

had offline exam. All students were excited for their final exam. They reach the exam venue on time.

After completion of exam team had last industrial visit at world's largest commercial aircraft manufacturing company **Airbus** situated in Hamburg.

Airbus is a European aerospace corporation, registered in the Netherlands and trading shares in France, Germany and Spain. It designs, manufactures and sells civil and military aerospace products worldwide and manufactures in multiple countries both inside and outside of the European Union. The company has three divisions: Commercial Aircraft, Defence and Space, and Helicopters, the third being the largest in its industry in terms of revenues and turbine helicopter deliveries.

Final assembly takes place at the Hamburg/ Finkenwerder site for the four members of the A320 family (A318, A319, A320 and A321). It's also home to the Airbus A380 major component assembly hall.

The spares centre is a material, logistics and suppliers' centre, which manages all spares-related activities. The Hamburg design office plays a pivotal role in the development and engineering of all Airbus aircraft. The production site manages structural assembly and outfitting of fuselage sections, as well as final assembly for A320 Family aircraft.

21<sup>st</sup> July was the last day in Germany for the team. All the students checked out their rooms by 10:30 am. All utensils and LAN cables given on day 1 were given back to Dr. Jelena Zascerincka. All the rooms were inspected by the mentor Prof. Dwipal Kadia and Prof. Nobert before the check out.

By sharp 11 am Team started their journey towards Hamburg airport. Again all students gone through immigration check at Hamburg Airport which went very smoothly. Team reached to Ahmedabad Airport at 8:30 AM. Parents were eagerly waiting for their wards. All team members were happy for their successful international trip and would treasure these memories for rest of the lives.

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(Mentor IEP- 2018)