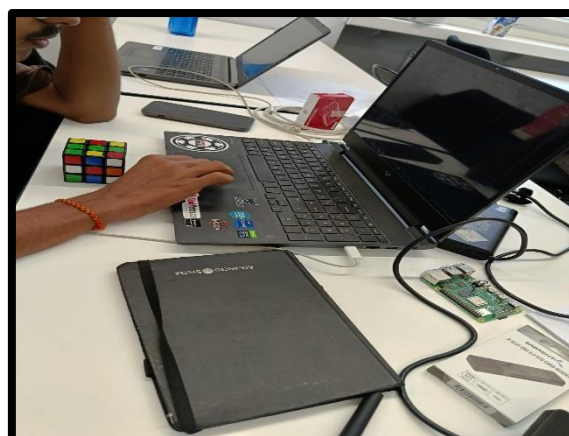


**Gujarat Technological University  
Student Exchange Program – IEP  
EC/EE; July 14, 2025 to August 14, 2025  
Hochschule Wismar**

**Week 1 [15 July-20 July]**



Germany is a very nice place in Europe. With great zeal for learning and gaining knowledge, the students began their journey to Wismar from Ahmedabad International Airport. The group was engaged in the necessary airport procedures and immigration. As the official start of the International Exchange Program, various memories were captured, reflecting the excitement and enthusiasm with which the journey was about to commence. This simple gesture marked the beginning of our international journey and preserved the memory of that special moment.

After a long flight, we arrived at Hamburg Airport, followed by immigration and baggage collection. Delegates from the university were there to receive us and the bus was ready. We all boarded the bus and started the journey towards the Wismar. After reaching there, accommodation was already arranged. All students were allotted their respective rooms. All students were divided into two different dormitories numbered 29 and 25. The whole process of room allotment was smoothly coordinated by Mrs. Nara of university international department.

On the next day, the orientation program was arranged. On behalf of GTU DIR, mementoes were offered to all officials of Wismar University. Then the campus tour was arranged by Professor Ahrens, main coordinator of the Wismar University and Yadu, who guided us through the various facilities and introduced us to the academic environment. Their insights helped students to become familiar with the campus layout and services. Then lectures for the subject “Internet of Things” were started by Prof. Cano which was an introductory session.

The lecture provided valuable knowledge and served as the foundation for the upcoming sessions. In the evening, there was a welcome gathering, as per German tradition to Kreta Restaurant for dinner. We all began the meal with a traditional drink, which Professor Ahrens humorously referred to as “holy water.” This light-hearted moment made the dinner both memorable and enjoyable. Here, there was good exposure to the local greeting and meeting traditions, and we had the chance to enjoy some relaxing moments.

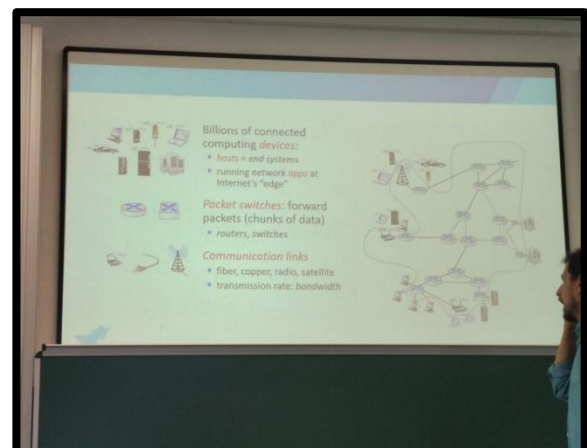
Then the next day we had the first industrial visit to the Leibniz Institute of Atmospheric Physics (IAP), located in Kühlungsborn. The institute is a renowned research centre specializing in atmospheric studies, radar meteorology, and remote sensing technologies. Established in 1992, it is internationally recognized for its contributions to studies of the stratosphere and mesosphere, gravity wave research, radar meteorology, and climate interactions. Its collaborations with global organizations such as the European Space Agency (ESA) and the German Aerospace Centre (DLR) highlight its scientific importance. The live demonstrations and interactive sessions gave us practical insights into the integration of electronics, communication, and environmental science. The visit to IAP Kühlungsborn was truly transformative. It helped bridge the gap between classroom learning and real-world research by showing us how advanced technologies like radar, lidar, IoT, and FPGAs contribute to atmospheric and climate studies.

After the visit, our group was taken to a nearby place called Seebrücke Kühlungsborn, a well-known pier and tourist attraction on the Baltic Sea. The serene seaside view, fresh and cold breeze, and calm surroundings offered us a refreshing break after the technical sessions of the day. The blending of the sea, sky, and horizon was extremely beautiful and truly remarkable from this point.



On our first weekend in Germany, we had the opportunity to visit the historic Schwerin Castle, one of the most famous landmarks in the region. Surrounded by lakes and gardens, the castle impressed us with its magnificent architecture and rich heritage. There was huge museum inside that displayed the rich history of the city. It was memorable place.

**Week 2 [21 July-27 July]**



During the second week, most students settled with food, environment, accommodation and study pattern. Professor Cano began with the course fundamental of the course and went into the detailing of the each of topic. He covered fundamentals, IoT related business opportunities and relationships between Information Technology as well operational technologies. He included IoT challenges, network architecture, system design, and various device communication. There was emphasis on scalability, interoperability, layered architecture and structural design principles. He also focused on engineering IoT networks and the concept of smart objects. Moreover he had explained sensors, actuators, and embedded devices as the core components of IoT systems. The session also covered sensor networks, methods for connecting smart objects, and the range and frequency bands used by various technologies. Additionally, we explored IoT access technologies such as LoRaWAN and their role in enabling reliable connectivity across applications. The session concluded with a detailed discussion on IoT security. There was exposure to tools that can be useful in IoT networks design.

The group was taken for a guided city tour of Wismar. The tour allowed us to explore the city's historic charm and visit its well-known churches, which reflected beautiful medieval architecture and cultural heritage. Walking through the old streets and observing these landmarks gave us a deeper appreciation of German history and traditions. The tour added a cultural dimension to our academic journey, making the day truly memorable.

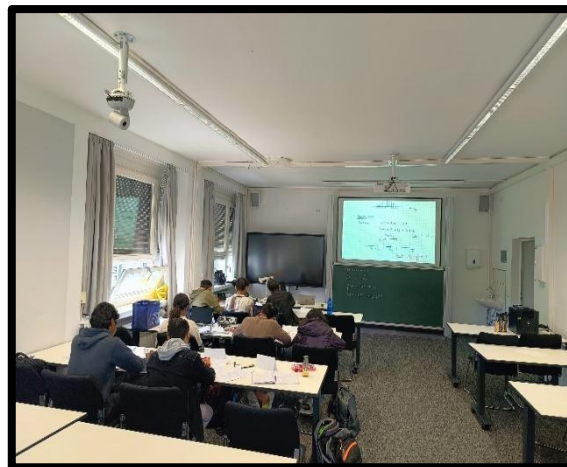
The medieval towns of Wismar and Stralsund, on the Baltic coast of northern Germany, were major trading centres of the Hanseatic League in the 14th and 15th centuries. In the 17th and 18th centuries they became Swedish administrative and defensive centres for the German territories. They contributed to the development of the characteristic building types and techniques of Brick Gothic in the Baltic region. This is exemplified in several important brick cathedrals, the Town Hall of Stralsund, and a series of houses built for residential, commercial, and craft purposes, representing its evolution over several centuries.

The towns contain a large number of authentic historic structures representing the evolution from the Hanseatic period to the Swedish era. As centers that were continuously inhabited and remained the heart of urban life, with harbours intact and economically significant across all epochs, both cities have preserved their functions and can therefore be described as authentic in this regard. The old towns are protected in their entirety as areas of historical value under the laws on the protection of historical buildings and monuments of the federal Land of Mecklenburg-Vorpommern, which require that all construction measures be subject to approval

Over the weekend group had explored Rostock. Rostock is very famous for shopping and branded outlets with huge discount. During visit students had bought lots of shoes and chocolates of brand like Puma, Nike, Jordan, Skechers etc. Moreover Rostock is the economic centre of Mecklenburg-Western Pomerania and the state's only city outside the core of a metropolitan area. The port of Rostock is the fourth largest port in Germany after the North Sea ports of Hamburg, Bremen/Bremerhaven, and Wilhelmshaven, and the largest port on the German Baltic coast.



### Week 3 [28 July-03 Aug]



During this week, the final course on was completed. Along with project presentation by the group leaders and their teams. Students were assigned different titles for preparing projects in the domains such as android application development for food, project based on arduino and AI. Each group was equipped with required hardware and presented their work in a very organized manner. During project preparation and presentation each team continued refining their designs, troubleshooting challenges, and preparing presentations for the upcoming evaluations. As a completion of IoT course, one full course examination was arranged. Faculties from Wismar University provided valuable remarks and feedback to students for the overall improvement.

One of the evenings was memorable because of a boat trip along the coastal of Wismar. During the journey, we witnessed a beautiful rainbow and the Disney Cruise Ship, which was under construction at the harbour. The experience followed by dinner on the boat, where everyone dined together, played games, and enjoyed a cheerful atmosphere. The sea climate, sky's pattern, and boat food all left an unforgettable memory on our mind.

Another visit to the Facility of Engineering Maritime, Plant Engineering and Logistics at Wismar University of Applied Sciences was organized. The visit provided students with an in depth understanding of maritime systems, ship simulation technology, and logistics operations. It served as a unique opportunity to explore how Germany integrates advanced engineering practices into maritime education and industrial training. During the tour, students were introduced to modern ship simulators, logistics facilities, and industrial automation infrastructure. Faculty experts explained the technologies used in real time ship operation environments and demonstrated their applications in maritime transport and logistics. This exposure helped us connect our academic knowledge with practical systems, highlighting the role of IoT, automation, and simulation in global industries.

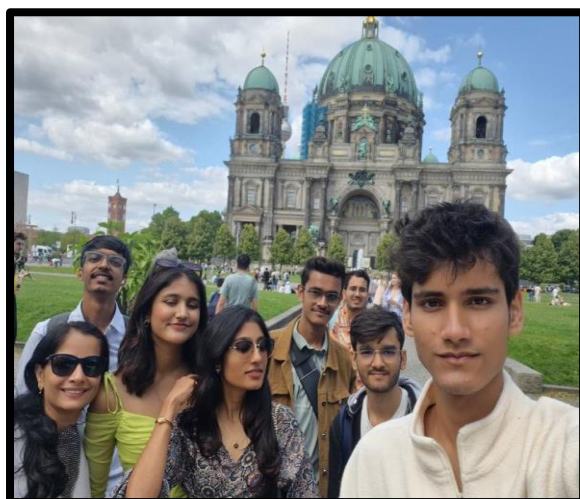
During the middle of the week new subject "Digital Signal Processing" was introduced by the Prof. Ahrens. The subject was introduced by giving a practical demonstration of different types of signals, which helped us visualize the concepts more effectively. Professor Ahrens explained the fundamentals of signals and introduced the concept of convolution, FTD analysis and its applications in signal processing. Each concept was demonstrated through hands on MATLAB exercises. Students were given basic MATLAB program related to a taught concept for better solving of the system and fundamentals. Later Garba night was arranged in the party lounge of the university. Students enjoyed a lot dressed in traditional attire.

Again, the weekend was an important attraction to the students. We visited Lübeck, a historic city known for its medieval architecture and cultural heritage. Our first stop was the grand Lübeck Cathedral, where the intricate design, stained glass windows, and spiritual atmosphere left a lasting impression. Later in the evening, we attended a musical event. The performance was uplifting, offering us a glimpse into Germany's rich artistic traditions while also providing a refreshing cultural break from academic activities. As part of our exploration, we enjoyed a scenic boat trip that offered a view Lübeck's historic skyline and waterways from a unique perspective. This relaxing experience highlighted the city's charm and its harmonious blend of tradition and modernity. Additionally, we visited a historic museum that showcased Lübeck's role in medieval trade and culture. The artifacts, displays, and architecture offered valuable insights, making the visit both educational and memorable.



Students visited Hamburg, where our first stop was a Hindu Mandir, followed by a visit to a Gurudwara. Both places offered a sense of peace and cultural connection. Later, we witnessed the vibrant Pride Parade, which showcased diversity, inclusivity, and the city's festive spirit.

#### Week 4 [04 August-10 August]



The DSP expert taught the Discrete Fourier Transform (DFT), focusing on its detailed applications in digital signal analysis. Prof. Ahrens explained the mathematical formulation of DFT and demonstrated how it is used to analyze both periodic and non-periodic signals. The session highlighted the limitations of DFT and its importance in real-world engineering problems. All the DSP concepts were demonstrated using MATLAB code and laboratory exercises.

One evening, we visited Hanse Sektkellerei in Wismar, a well-known winery specializing in sparkling wines. The visit gave us the opportunity to learn about traditional methods of wine production. Observing the production process and the trading of this unique wine within the region was very interesting. The experience combined cultural exposure with social interaction, and the evening concluded with a delightful dinner, making it both enjoyable and memorable.

The next industrial visit was arranged at WEMAG AG, a leading regional energy provider based in Schwerin, Germany. The visit aimed to give us first-hand exposure to the German energy sector and its focus on sustainability. At the beginning, we were warmly welcomed by the company staff and provided with useful materials as a token of hospitality. This gesture set a positive tone for the day and highlighted the company's professional yet friendly approach.

WEMAG's operations include renewable energy production, smart grid management, and battery storage technologies. The company serves a large region in northern Germany, managing over 15,000 km of electrical cables. The company also with related to advanced tools such as SCADA for real-time monitoring, GIS for grid mapping, and AI-based load forecasting systems.

The highlight of the visit was a tour of WEMAG's large-scale battery storage facility, one of Europe's first commercial battery parks. Here, students had observed lithium-ion storage systems and advanced battery management technologies that stabilize the renewable power supply from solar and wind sources.

In the same period Digital Signal Processing subject was concluded with Discrete-Time Fourier Transform, signal stability, filtering, and practical problem-solving. Students were required to take various component examinations. The various sessions were combined, concluded and assessed with to reinforce conceptual learning. All component examinations were successfully completed by students.

Students visited Berlin, where they explored famous landmarks, enjoyed the city's vibrant culture, and created memorable experiences together, making the trip both exciting and enjoyable. Moreover, we explored Berlin, a city of immense importance to Germany and the world as its capital, a vibrant center for politics, arts, culture, and media, and a significant historical site that embodies the nation's modern transformation, reflecting its tumultuous past and future aspirations through UNESCO World Heritage Sites such as Museum Island and the Brandenburg Gate. It was great and memorable visit.



**Week 5 [11 August-14 August]**







In the last week, students completed various examinations and submitted mini-projects related to the subject Digital Signal Processing.

One evening, we visited a beach in Wismar known as Insel Poel. The calm sea, refreshing breeze, and scenic surroundings created a peaceful atmosphere, providing us a relaxing break from our academic schedule. The place was like a dream. The beauty of the place and way to Insel Poel cannot be described in words. Green farms with many of horses, rainbows, small houses with numerous rose plants. It was wonderful and unseen beauty of nature.

A group of students was invited to bid farewell to Germany at a prestigious, historic restaurant. The journey concluded with remarkable experiences that combined academic learning, industrial exposure, and cultural exploration. Leaving behind the beautiful cities, kind professors, and international friends was emotional, as every moment contributed to making this experience unforgettable. As we boarded our flight, we carried with us not only technical knowledge but also lifelong memories and valuable lessons that would guide our future academic and professional endeavors.

The journey to Germany was truly remarkable, offering valuable learning experiences for life. We experienced new cultures, history, discipline, and technology; a cool and calm environment; the beauty of each season; interactions with people from diverse cultures; the hard work of students striving for success; and the support of the cooperative Indian student group in Wismar. It was an amazing opportunity for all the students. The tour concluded with a six-hour stopover in Dubai during our Emirates Airlines flight, and the group was warmly welcomed by their parents at the airport.



