Birla Institute of Technology & Science, Pilani
Pilani | Dubai | Goa | Hyderabad
Practice School Division

CHRONICLES

Cement, Infrastructure, Mechanical,
Textile and Steel

PRACTICE SCHOOL - I

Summer - 2019

From the Desk of the Editor

It is my great pleasure to bring forth the inaugural edition of the PS-I Chronicles. This edition features over 2243 articles from PS-I students sharing their experiences during summer 2019.

The basic premise behind the release of PS-I Chronicles is to document the PS-I learning experience of students keeping the below objectives in view.

- To provide more information on the learning experiences by immediate senior students and PS-I faculty about stations, and thereby enlightening the learning opportunity among the student community.
- To provide the faculty with the enhanced information about the type and nature of work carried out at the organization.
- To transform the knowledge gained at the organization into class room teaching and also to identify the scope of deepening the collaborations with organization.

The articles have been classified into six categories based on the industry domain.

- Chronicle 1: Information Technology
- Chronicle 2: Electronics
- Chronicle 3: Chemical, Mechanical, Cement, Textile, Steel, Infrastructure
- Chronicle 4; Health Care and other
- Chronicle 5: Finance and Management
- Chronicle 6: Government Research labs.

I would like to thank students for sharing their experiences during their stint at the organization. I would also like to thank Prof. Arun Maity and Prof. M. K. Hamirwasia for reviewing the articles and providing us the feedback. I would also like to extend my thanks to Mr. Om Prakash Singh Shekhawat, Prof. S Murugesan, Dr. G Muthukumar and Mr. Varun Singh of the Practice School Division, of BITS, Pilani – Pilani Campus for their help in bringing out this edition of PS-I Chronicles.

I would be happy to receive any feedback regarding the Chronicles. Please feel free to email me at psd@pilani.bits-pilani.ac.in or at anil.gaikwad@pilani.bits-pilani.ac.in.

Anil Gaikwad

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Domain: Processing

PS-I station: 505 Army Base Workshop , New delhi

Student

Name: Gourav Roy (2017A4PS0534G)

Student Write-up

Short Summary of work done : At the PS station we had to choose our own project so we visited the various parts of the army base and chose the project Engine Assembly . Doing this project we got to learn a lot about how Engine Stripping , Engine testing is done how the various components of the engine are assembled and and also learned about supercharger and turbocharger and how they increase the efficiency of the engine .

PS-I experience:
I was surprised seeing the battle tanks for the first time and the scale at which the work is carried out in the army base .
Learning outcome : I learnt a lot from this practice school.The learning was both technical and non-technical . Technical things were the things which I learnt on going to the ps station other than that I learnt to live in a big city like Delhi which was a great experience for me . Also seeing the work culture in the army base was a good learning. We interacted with many army people and learnt how about their lives overall it was a good learning experience.

PS-I is an exposure oriented course : Yes it provides a good experience in technological as well as non -technical fields like living in a new city with new friends.

Name: SHUBHAM KUMAR (2017B4A40882P)

Student Write-up

Short Summary of work done : My work was to analyze the overhauling of the T-72 tank. It dealt with a covering of various sections of the tank, like how the tank is overhauled

through a long sequence of stages and how it is tested before making it functional for war zones.

PS-I experience: It was a wonderful experience for me to work on and analyze how tank T-72 works. It was once in a life time experience.

Learning outcome : I got to know about various mechanical parts of the tank T-72 and how a tank goes through various stages of overhauling.

PS-I is an exposure oriented course : Yes , I completely agree with this statement. PS-1 gives a vivid picture of how a real world industry works. It gives proper approach to students to deal with future internships and practice school.

Name: Vaibhav Mehrotra (2017B1A31753H)

Student Write-up

Short Summary of work done : I have done the study project on fire fighting system of Indian army main battle tank T-72. I have learnt the workings of fire sensing units, Automatic and Portable Fire Fighting Cylinders, Amplifier circuits, CBS protective system as a whole. On the other hand I have also learnt and understand the all electrical and electronics aspect used inside the tank.

PS-I experience: My experience at 505 ABW was awesome. I have learnt rather enjoyed the working at my ps station.

Learning outcome : I have understood the technical background of the main battle tank T-72. I have learnt about various kinds of circuits used to automate the fire fighting system inside the tank. I have understood my role as a electrical and electronics engineer.

PS-I is an exposure oriented course : Yes, definitely I get the industry exposure and it is for my own good to develop as good electrical and electronics engineer.

Name: Pranjal Shukla (2017A4PS0634H)

Student Write-up

Short Summary of work done : Technical
We studied all the processes involved in overhauling of tank also its various subsystems including Engine section, Suspension department, Gun section, Gearbox ARD, and we found that the efficiency of working is close to 50%.
The main reason for this inefficiency is the uncertain and slow supply of spares and inventory necessary for overhauling of tanks.
Management
We undertook various analysis of the ABW which included Plant layout in order to determine the type of layout the plant has, Production and Planning to determine which type of production process is carried out, Inventory Planning analysis which included the ABC analysis of the spare parts and accessories needed for overhauling, Quality assurance which included the study of worldwide standards followed by the workshop and Equipment maintenance which included the process involved in maintenance.
Simulation
We used a simulation software called Flexsim in order to carry out various analysis which includes Line balancing, Layout analysis, Resource time analysis, Value stream mapping. We obtained various graphs from these analysis and from that we inferred that majority of the stations are idle for long periods leading to underutilization of the resources available which was done by . Also various items were recognised that consumed man hours and resources but didn't add any value or very less value to the product which was determined by Value stream mapping. Thus various conclusions were made on the basis of real life simulation of the 505 ABW.

PS-I experience: Expected more.
Learning outcome : Simulation software: Flexsim. Knowledge about various management aspects like plant layout, inventory management, production and planning etc.

PS-I is an exposure oriented course : True. Got to know how people are managed. How industry works with production criticalities etc.

Name: Yash Goyal (2017B4A81028G)

Student Write-up

Short Summary of work done : I studied about the Electrical starting-cum-charging system of Tank T-72.
To achieve this I studied the circuit diagram of all the components involved in the circuit.I also studied how each component is tested for failures and how does one make sure that the component can function in a real-life scenario.

PS-I experience: My PS-I experience was good. I got to learn a lot and saw real engineers at work.
To add to it, I also got to meet a lot of new people helping me establish new connections and thus expanding my network. It was very useful listening to the feedback of the people working in the industry giving me a clarity of what skills are might be useful to acquire in the coming years of my undergrad.

Learning outcome : I learnt about the essence of teamwork and why it is important to trust your teammates.I also learnt a lot about electrical and electronic circuits and how protection against heat, circuit failures etc. need to be accommodated while designing circuits.

PS-I is an exposure oriented course : I believe this statement to be true as I felt the whole point of PS-I was so that one could see practical applications of all the theoretical knowledge gained in college.

Name: SHASHANK KATARIA (2017A3PS0899G)

Student Write-up

Short Summary of work done : Tank T-72 is a fully tracked vehicle having powerful armament, reliable armour protection and high mobility. The tank carries a crew of three personnel.
The Tank is equipped with a 125 mm smooth bore gun stabilized in elevation and azimuth, a coaxial 7.62 mm machine gun and a 12.7 mm anti-aircraft machine gun installed on the Commander's cupola
The Tank is provided with a high-accuracy laying and sighting material and with an automatic loading gear ensuring high effective rate of gun fire.
The anti-aircraft machine gun mount is provided with sighting and laying equipment.
Thus, making it possible to fight both aerial and ground targets.

The Tank is equipped with devices designed to protect the crew and inner equipment from a shock wave in case of a nuclear explosion, as well as to protect the crew from radiological agents. As to penetrating radiation, the crew and inner equipment are protected by means of sealing of the vet.
There is a provision made for under water stream-crossing equipment, smoke-generating equipment for placing smoke screen, and fire-fighting system is designed to extinguish the fire inside the tank.

PS-I experience: The key problem we tackled during our tenure at 505 Army Base Workshop was finding solutions as well as suggesting efficient modifications in the testing system of the Electrical Starter Circuit of a T -72 tank. To achieve this, we referred to the précis issued to us by the TT Cell library, took part in on-field demonstrations of an actual tank and its various electrical/electronic components as well as carried out numerous hands on tasks in the TEG (Tank Electronic Group) section at the Workshop. The Electrical Starter Circuit: is a starter cum charging device for the T -72 tank which puts together various components and controls how the batteries are combined together to give the appropriate voltage required.
We divided our project into multiple phases which begins with the studying of independent components of the circuit. Later, our goal switched to focusing on the circuit model: as a whole. Since the major tasks carried out at dine Workshop are testing and repairing, we significantly focused on first delving into, how the testing process is done and the issues faced during it. This ultimately helped us come up with a set of ideas to modify the existing process by suggesting healthier alternatives.

Learning outcome : Looking at the motive with which we began this project, we came a long way beginning with an optimistic approach of suggesting electronic alternatives. Initially, it seemed a bit odd to find an abundance of electrical components like resistors and motors in every component that was researched upon. But with time, when the entire circuit was studied in prospect, it was realised how safety and security is of utmost importance in front of any other factor like cost, power consumed etc. Hence, the perfect combination of relay devices along with amplifying components like BJTs is present to ensure systematic organisation as well as increased durability. However, it cannot be completely ignored that remaining stuck on analog circuits does act as a shortcoming. With changing necessities, the need of the hour is accepting digital technology for faster processing and better results. Analysis did pop up the question of reliability, but on this front, we have to accept that multiple simulations and testing under varied conditions would be necessary before accepting this change. Yet, going through this grind has a big advantage in the longer time.
Another factor to be taken into account is the tedious nature of the testing process. Despite the knowledge on which relay is causing an issue in the circuit, every individual part has to undergo the entire LED light detector process before the defects in the circuit are found.

PS-I is an exposure oriented course : The shift from book knowledge to practical activities is enlightening. Transcending from theoretical concepts to actually handling

machineries, both through hands on tasks and through lectures by instructors, proves to be a major learning curve.

Name: Manan Gupta (2017A3PS0488H)

Student Write-up

Short Summary of work done : 505 Army Base Workshop is the workshop where the Main Battle Tanks T-72 and T-90 of the Indian Army are overhauled. Work encompasses both mechanical and electronics field of applications. Our work, as electronics students was to do a comprehensive case study on the Fire Fighting Equipment (FFE) deployed in a tank to suppress any fire that occurs in the tank. This involved understanding all the subsections of the FFE, including the sensors and control units.

PS-I experience: PS-1 gave me a good practical exposure. It was fun-filled learning along with people from the Army that were working on the overhaul of the actual tanks deployed in war. It was an exciting opportunity and at the same time allowed me to use my summer break in a productive manner.

Learning outcome : Our project on the Fire Fighting Equipment deployed in a T-72 tank taught us about the sensors and control units. This involved a study of the electronic devices (transistors, diodes, relays etc) and the control logic that was used. It was closely linked to the courses we have done as part of our EEE CDCs in campus. We also learnt about the testing philosophy applied in a workshop, which is a step-by-step procedure of testing -> repair -> simulation.

PS-I is an exposure oriented course : PS-I gave a good industry exposure. It brought us face to face with the application and practicality of the theoretical concepts we learn as part of our courses in college.

PS-I station: A. V. Engineers , Gurgaon

Student

Name: Prateek Aryan Singh (2017B2A81021P)

Student Write-up

Short Summary of work done : Our team implemented multi purpose portal for the company, using HTML, CSS and Javascript.
This portal would allow the company to manage and update their orders online and dynamically.

PS-I experience: After the team was formed, we spent the first week identifying problems which we could solve and hence create impact in the company.
We found that that the company still had a whiteboard based order tracking and management system.
Hence, we decides to create a multipurpose portal whose main purpose would be to provide an online and safe order tracking and management system, which we were successful in doing

Learning outcome : Learnt HTML, CSS, Javascript, team working and leadership.

PS-I is an exposure oriented course : I believe this statement to be true as I got my first experience and exposure of problem identification and solving during PS-1.

Name: Dev Raj Khandelwal (2017A4PS0477P)

Student Write-up

Short Summary of work done : As a member of the Formula Student team of BITS Pilani, we opened this station with the hopes of improving the design of our car. As a suspension engineer, I was tasked to design and complete the analysis for the pull-rod suspension, as well as select the dampers and springs for the new car. I learnt a lot of important industry standard softwares like solid works, Autodesk Fusion 360, Ansys, optimumK and optimumLap. These softwares were used for various aspects of the design and analysis. The initial two weeks were spent in completing the theory and familiarising myself with the various softwares. After a satisfactory level was achieved, the designing could be started keeping in mind the various rules and constraints presented in the

rulebook for the competition as well as the manufacturing capability of our various sponsors.

PS-I experience: AV Engineers provided a great learning experience. Their staff with their immense knowledge of Computer Aided Design helped us in improving the component design. The availability of latest equipment like 3axis and 5axis CNC and VMC machines allowed us to get a better understanding of the G-CODE and helped in understanding the various additional steps required to make a design manufacturable.

Learning outcome : Worked with industry specialist on CAD models. Learnt various industry standard softwares like Solidworks, Fusion 360, Ansys, OptimumK and OptimumLap.

PS-I is an exposure oriented course : This statement was validated at our PS station. It provided a great learning experience and helped us understand how a design is converted to a final product.

Name: ABHINAV SINGH (2017A1PS0813P)

Student Write-up

Short Summary of work done : As a member of the Formula student team of BITS Pilani - INSPIRED KARTERS we opened this PS station in hopes of improving our current designs and it was worth it. I look after the aerodynamics of the car and learnt a great deal of computational fluid dynamics in the course of these 6 weeks. Surface designing in Solidworks and the subsequent CFD simulations of these designs was my main work apart from doing a few static FEA simulations for the chassis. I submitted my final report titled: Computational fluid dynamic study & Design of Bodyworks for an FSAE vehicle.

PS-I experience: AV Engineers have been an old sponsor of the Formula Student team of BITS Pilani and provided us with all the necessary equipment and know how to manufacture our chassis and other associated parts. It was a great experience as I got to work hands on CNC machines and learnt a great deal regarding manufacturing industry.

Learning outcome : Computational fluid dynamics plays a vital role in chemical engineering and as I had a lot of interest in fluid mechanics its an easy intersection point between mechanical and chemical engineering. I learnt ANSYS FLUENT for external flow

analysis around our car and SOLIDWORKS for designing the carbon fiber bodyworks for the vehicle.

PS-I is an exposure oriented course : Yes, when one gets to experience how things are actually manufactured in the industry then only one can appreciate the vital role that engineers play in society.

PS-I station: Aaress Auto Pvt.Ltd , Faridabad

Student

Name: Vibhor Sharda (2017A4PS0424P)

Student Write-up

Short Summary of work done :
I was provided with a 2-D drawing of a component and the objective iwas to develop the complete plan of how to bring this product into market starting from interpretation of this drawing to dispatch covering all the manufacturing processes involved. The project also included analyzing the commercial and feasible aspect of the component and preparing the required documentation to be sent to the customer.
In my project I have worked on
1. Interpretation of 2D drawing: Learnt about the various symbols and abbreviations used in Professional world.
2. Process Flow Diagram: Making a basic plan containing the various processes needed to complete the task in proper order.
3. Feasibility & Commercial Analysis: Analysing whether the required part can be manufactured with existing technology and cost incurred.
4. Documentation required before mass production: Documents to be submitted according to PPAP including
4.1 Process Flow Diagram
4.2 Control plan
4.3 Checking aids etc.
5. Manufacturing processes: I gained basic knowledge about
5.1 Mould Preparation and Casting
5.2 Fettling Process
5.3 Machining Process

5.4 Inspection & Dispatch

PS-I experience: My experience at Aar Ess Auto (P) Ltd, Faridabad has been very beneficial in bridging the gap between theoretical and practical knowledge. It has given me a taste of how to conduct myself in industrial sector.

Learning outcome : My objective to undertake this project was to get equipped with the knowledge of New Product Development and Quality Control. I learnt the following things
Tools of Lean manufacturing.
Basic knowledge of the measuring equipment used in the organization.
Basic knowledge about the manufacturing process and New Product Development

PS-I is an exposure oriented course : Yes, PS-1 was my first experience of working in industrial sector. It gave a new perspective to what i have learnt from books and how to apply them in real life. PS-1 is a perfect opportunity to get a hands on experience and a taste of industrial/ corpora

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PS-I station: ACC Ltd. , Mumbai

Student

Name: Kunal Asati (2017A2PS0881H)

Student Write-up

Short Summary of work done : Our project was Inbound Logistics – An analysis of coal sourcing. We started our work by learning what is cement and how it is manufactured. Then we read about its raw material and their substitutes. We read about the importance of coal in cement industry in detail. Then we started our study on the transportation of raw materials, mainly coal in the company. The target was one of the cement plant of ACC located in Chanda. A deep analysis was performed for different transporters of coal in ACC Chanda to optimize the cost and make the process more efficient. An analysis was also performed for laterite ore transportation for ACC Wadi plant. Finally, we got some patterns which were seen as a result on graphs and tables. In the end, we made a final

report on our analysis stating which transporter and mine was most efficient. Also we stated whether the given contract with the transporter was profitable or not.

PS-I experience: ACC Ltd. is one of the India's largest producer of cement and also manufactures other products like ready-mix concrete so we were lucky to be interns there. The open learning environment between team members and within the organization was very encouraging. I got to interact with various other people in the company. The PS1 gave me the opportunity to enhance my skills in communication. It was an overall good experience.

Learning outcome : I got to learn about the working of the organization in real life. I also got a chance to improve my interpersonal skills. I gained confidence in presenting reports and presentation. Overall it gave me a good exposure of the corporate life.

PS-I is an exposure oriented course : Yes, I totally agree with this comment. We get to see what happens in real life which is a lot different from what we get to learn from books. We get to see the corporate environment.

Name: Kaivalya Shah (2017A2PS0597P)

Student Write-up

Short Summary of work done : Our project was Inbound Logistics- An Analysis of coal sourcing at ACC Chanda Cement works. My project started with a deep understanding of cement industry and why coal is used in cement manufacturing and what are the factors which controls the quantity of coal to be added. We were provided with the Truck Raw Data and Sampling report (Quality report of coal). There were around 15 mines and 4 transporters. We were given particular contract and we had to extract some points through which we can assess a particular contractor's performance. We used some advanced excel functions and made a presentation on how they can reduce their cost by ordering more quantity from some particular mine and particular transporter. Overall there was a cost reduction of around 6 crore rupees of total cost of 117 crore for coal for ACC Chanda Plant.

PS-I experience: Working in India's one of the biggest cement company - ACC ltd. was in itself a great experience. We were assigned our work in ACC Head Office (Mumbai) from where all the management of all 17 Cement Factories and 75 Ready Mixed Concrete plant happens, so we got a huge exposure towards how they manage such a huge

company. All of our mentors were really helpful and we got to learn many things from them. The work culture at ACC was also good. Overall it was a nice experience.

Learning outcome : We became familiar with the actual corporate work environment. We saw the challenges faced by a manufacturing company, how they deal with such challenges. We learnt how to negotiate for a particular deal, our mentor was very good at building relations with transporters and vendors. Some soft skills were also enhanced like presentation skills, analysis skills. As we were assigned a managerial work, our managerial skills also enhanced.

PS-I is an exposure oriented course : Yes, I totally agree with this statement. PS-1 gives a great exposure towards work culture.

PS-I station: Adani Power , Ahmedabad

Student

Name: Devansh Dhrafani (2017B5A41569H)

Student Write-up

Short Summary of work done : My team was allotted the project: "Autonomous Vehicle for Solar Panel Inspection." So basically, we had to design a robotic rover that would autonomously navigate through the Solar Panel Plant and look for defects/cracks/dust deposition on the panels. Currently, this inspection work is done manually which is expensive, labor intensive and highly inefficient. This project was by no means an easy task. But, having some prior knowledge and much dedication, we were able to take up the task. We were a team of 4. Each of different disciplines (1 Mechanical, 1 Electronics and 2 Computer Science majors). As robotics is an inter-disciplinary field, our team was perfect for it.
Being the mechanical engineer in the team, my work was to design the CAD model of the robot and build the chassis. As this project was going to be used on the field, I had to keep in mind the environmental conditions that it had to face. I started designing the chassis on Solidworks 2017. After completing the design, I did its structural analysis on ANSYS Student 19.2. Finally, I used Adani Power's 3D Printer to print out the entire

chassis. Once the chassis was made, I assisted the Electronics and Computer Science members in assembly and testing of the robot.

PS-I experience: My PS-1 experience was quite unique. From the technical perspective, I learnt a lot of new skills and software, all of which would be really helpful later in my career. Additionally, PS-1 helped me in experiencing and understanding the corporate life. Getting such exposure so early in my career was very valuable. The GD component of PS-1 evaluations provided me with an opportunity to learn a new practical skill. Overall, my PS-1 experience was highly constructive and helped shape my technical knowledge as well as personality in a profound way.

Learning outcome : I learnt various software and concepts like: CAD Modelling using Solidworks 2017, Structural Analysis using ANSYS Student 19.2, 3D Printing Slicer software: Simplify3D. Apart from that, I learnt to operate, troubleshoot, diagnose, repair and modify a 3D Printer to achieve desired quality of print. As this was a time-bound, extensive project, I learnt to create a proper schedule of 3D printing.

PS-I is an exposure oriented course : Yes, I agree completely. In just 50 days of summer, I gained the exposure comparable to 6+ months. Getting such exposure so early in my career was very valuable.

PS-I station: Aditya Birla Insulators , Halol

Student

Name: Raghav Gagrani (2017A3PS0408H)

Student Write-up

Short Summary of work done : Worked on 2 projects-
1) Asset Management system- We were required to build an application on javafx for issuing, entering and returning of assets of IT department.
2) Overall effective efficiency- We were gven the raw data of 42 dryers ad we were required to calculate the OEE of all the dryers of one year and further if the efficiency is low then we have to find a solutin for it.

PS-I experience: It was good. I was able to learn that how a company works. I learnt how to work in teams and how to deal with different types of people around you

Learning outcome : During my PS-1 i learned more about the java application development and how to use MySQL and pivot tables in excel for showing the data in effective manner

PS-I is an exposure oriented course : Yes PS-1 is exposure oriented, it helps to learn about how the company setup works in real life what problems are being faced by them, how to increase the productivity is the major concern of the company. We learnt about how to work in teams how to deal w

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PS-I station: Atomic Energy Regulatory Board (AERB) , Kalpakkam

Student

Name: I S RANJITH (2017A4PS0362G)

Student Write-up

Short Summary of work done : This project involves designing and analyzing a safety related steel structure as per the regulatory requirements of Indian standards for wind loads.
The wind loads were estimated by IS 875 PART3 2015 (Wind loads), the basic wind speed for the region was taken and was multiplied with factors to obtain the design wind speed. Then design wind pressure and force at different heights is calculated using it. Since our structure has multiple frames we also require solidity ratio of each frame and spacing ratio between frames to calculate the resultant load. All of the wind load calculations were done using a computer code developed on Python3.
The structure was modelled on ANSYS using BEAM188 and MASS21 elements by incorporating several assumptions. Then static analysis was performed by applying

previously calculated wind forces and boundary conditions in order to get output as force and moment reactions of the structure.
Lastly, Design qualification of members was done using Python according to IS 800 2007 (GENERAL CONSTRUCTION IN STEEL – CODE OF PRACTICE).

PS-I experience: The project was given according to our choice. My mentor was very helpful as he gave me plenty of time and guidance through out the project. I also visited various labs and reactors in IGCAR complex. It has a nice balance of industry visit and project work.

Learning outcome : 1)I learnt about nature of wind loads and its estimation for a multiple frame steel structure.
2) Modelling and analysis of a complex test vessel bearing steel structure in ANSYS for wind loading condition
3) Design qualification of critical members identified from ANSYS output
4) Learnt how to write Python3 codes for wind load estimation and design qualification of members.

PS-I is an exposure oriented course : Yes, I my view it is indeed the case as I learnt about working of the organisation and functioning of various research groups and labs.

Name: Sankeerth Reddy Anumandla (2017A1PS1032H)

Student Write-up

Short Summary of work done : I have worked on modelling the flow rate of a Natural Circulation Loop, which works based on the principles of Natural Convection. These loops find applications in many places like cooling of small electrical appliances to passive safety systems in nuclear reactors.
As these are passive systems, no human intervention is required and there are minimal moving parts so low maintenance costs.
My work during PS-1 involved developing the analytical expression considering various geometric and operating parameters, and the checking the effect of each of these parameters on the mass flow rate.

PS-I experience: It was a very good learning experience, where we understood the in and outs of the nuclear power production and the energy need of this country.

I am actually happy that my contribution has played its role in improving my technical knowledge and in the advancement of our country

Learning outcome : I have learnt about the operating structure of a nuclear power plant and the ay everything is carried out.
As far as my work is considered, I have learnt how the subjects I have learnt can be applied in the real world.

PS-I is an exposure oriented course : It is an exposure oriented course because, we just finished our second year and are not clear about what to do next. PS plays an important role here, by helping us in realising where are true interests lie and how the courses we are taking are actually he

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PS-I station: Baga Cement Works , Solan (H.P.-

Student

Name: Salil Kasaudhan (2017A1PS0748P)

Student Write-up

Short Summary of work done : Heat Balance and efficiency Optimization

PS-I experience: It was a good PS station in terms of interaction within the Organization, however Project opportunity was less in the Chemical Due to Various reasons like implementation of each and every idea is costly.location is not good in terms of connectivity from major places as the place is in very outskirts.

Learning outcome : I learned about various new Formulas, Concept also the process of cement manufacturing while completing my project. apart from this i also learned how a plant management works.

PS-I is an exposure oriented course : Yes , I do agree with this as I learned about how management works in plant. which is Completely different from my course .So it gives good exposure.

PS-I station: Ben Line Agencies (india) Pvt. Ltd. , Mumbai

Student

Name: Aadarsh Rikshit Sinha (2017B3A30690H)

Student Write-up

Short Summary of work done : Did thorough research on "Oil Rigs at Sea and it's Capabilities" prepared a 30 page report on the same, made a 15 slide long powerpoint presentation of the same and gave a 30 minute long presentation on the same in front of The General Manager of the company, our PS instructor, our PS co-instructor, and the office staff. The work gives a deep insight into the oil rig industry in today's world. It talks about the past of the oil rigs, The Types of oil rigs, Drilling and Circulation system of an Oil Rig at sea then moves onto the advancements in technology when it comes to drilling. We talk about new drilling techniques- directional drilling, deepwater drilling, smart drilling then head to talk about the future of the oil and gas industry.

PS-I experience: General Manager, an ex-Navy Commander taught us about the workings of the shipping industry, we had visits to Navy Port, Container Freight Station, Cable Communication System, We also had stimulating intellectual conversations in the office among our 5 member team from the university, The General Manager and a fellow summer intern from Scotland. These conversations helped me widen my horizon and sparked my scientific curiosity. The report making procedure was a great learning process, I got a lot of tips from my peers and PS co-instructor on how to go about making a research report. I got to learn about giving a professional presentation in the corporate world- about selling the idea, gaining the attention of the audience and selling the idea from the Company's General Manager. I also got to know of a few resources which smoothened the research process. Overall it was a great learning experience and would recommend the station to any student who wants an overall balanced PS station as the first touch with the professional world.

Learning outcome : I learned how to balance life and work, the importance of time management, teamwork, and collaborations, I also got to learn a lot about the corporate culture and the professional behavior from the office staff.

PS-I is an exposure oriented course : Yes, I would strongly agree to this.

Name: Manglunia Rishabh Rajkumar (2017A2PS0956P)

Student Write-up

Short Summary of work done : the project assigned to me helped me in understanding how the shipping industry works. It was regarding the logistics of cargo transport from port to factory and back to port. it covered various topics about how the entire operations are done, what are the documents required in order to successfully carry out an import or export operation.

PS-I experience: the overall environment was good. the company officials paid special attention to us and devoted time to talk to us regarding the industry. we were taken to a container yard and shown how the repairing of the container is done. we were also taken to TATA Communications Landing station where we were shown by the company officials how the submarine cable network is laid and how various repairs and modifications are carried out on them. we were also taken to a port where we saw a ship and had the lucky opportunity to get on the ship to briefly understand its functions and workings.

Learning outcome : I learnt that there is a lot more in the world than just engineering. there is an entire side of the world- the commercial side- that I was not aware of. I also learnt that a lot of background work goes into successfully transport cargo from one point to another.

PS-I is an exposure oriented course : I agree with the above statement. The course did broaden my horizon as to what the world is and how it functions. Although there is still a lot left to learn. This wasn't even the complete tip of the iceberg.

PS-I station: Bharat Coking Coal Limited (BCCL) , Dhanbad

Student

Name: ABHINAV SWARAJ (2017A3PS0589H)

Student Write-up

Short Summary of work done : The topics that have been discussed include
1) the grid-layout of the substation and power distribution through ring electrical power distribution system which explains how the ring system is superior and more efficient than the radial distribution system used in earlier times;
2) the various equipments used in the substation for switching, control and protection purposes
3)the modern day household wiring system and the equipment deployed to achieve it; and
4)the Diesel generator which is used to maintain continuous power supply in case of a power
cut or overloading in substation, and its major components.

PS-I experience: We got a detailed explanation of the layout of the substation, and the array of protection, control and switching equipment deployed therein. We developed quite an exhaustive understanding of the mechanism by which power is received, stepped down and transmitted by the substation and all the processes that happen in between. We were amazed to learn about the extensive arrangement of circuit breakers, fuses and isolators that are deployed to detect and interrupt the faults, and also the various ways in which a fault can occur inside a substation. It was intriguing to know about the function of Relays, how they communicate the occurrence of a fault to the circuit breakers. Lightning arrester was another interesting equipment that we were acquainted to, and the mechanism by which they bypass the surge in current without affecting the continuity of supply.

Learning outcome : Our training at BCCL, Dhanbad has been aimed at giving us a hands-on experience of the electrical power sector and making us industry ready. Our project falls under the domain of power systems that deals with the electrical machinery required for the generation and distribution of power. The present-day electrical power system is A.C., that is electrical power is generated and transmitted in the form of alternating current. It is generated in thermal power plants generally away from consumers. The characteristics of this alternating current can be changed using an apparatus called substations.

PS-I is an exposure oriented course : I agree with this statement. This training has taught us that unlike the academia, which provides us the leeway to make mistakes and experiment with our methods, the industry doesn't allow for such lapses as the consequences of an accident can be severe.

PS-I station: Bharat Coking Coal Limited (BCCL) , Dhanbad

Student

Name: Arkojit Chatterjee (2017B2PS1012P)

Student Write-up

Short Summary of work done : Website development. A portal type website to manage stock keeping in the different offices of the organisation.

PS-I experience: It had a positive impact on both my technical and soft skills. I learnt many technical skills like web development, DBMS etc and the GD/PI sessions improved my soft skills.

Learning outcome : Was able to make a fully functional portal for the systems department of the BCCL, Dhanbad Koyla Nagar branch.

PS-I is an exposure oriented course : It exposed me to an office environment, work timings, dead lines and due dates. So yes indeed it's an exposure oriented course.

Name: Akshat Adarsh (2017B4A81019G)

Student Write-up

Short Summary of work done : To understand the working of Multiprotocol label switching networks and VPNs.To learn about the Private business exchange systems and learn the installation,programming as well as functioning of PBX systems in BCCL headquarters.

PS-I experience: It was a very different experience.Not only did i get to learn theory about my topic but also how it was applied in the office.I got acquinted to the work culture of a maharatna company,Coal India Ltd and got the chance to interact with some great minds of the company.I was given the oppurtunity to assist with video conferencing in a BCCL board meeting which involved all directors,HODs and members from ministery of coal.It was a very good learning experience on how these things work.

Learning outcome : Hands on exposure on MPLS and PBXs and the work culture of coal india limited.

PS-I is an exposure oriented course : It is very true.The exposure offered at PS-1 can not be matched with any other course in the academia.We get to understand the working of a company and be able to contribute to it through our projects.

PS-I station: Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI) , Kalpakkam

Student

Name: Dhanvanth Balakrishnan (2017B5AA1518H)

Student Write-up

Short Summary of work done :
The Inspection System robot is deployed in the SG (steam generator) and would have to orient itself in a plane parallel to the plane of the tube sheet. During the deployment, the errors in the system will cause the robot's workspace plane to become disoriented to the

tube sheet plane. This eventually causes problems in inserting the inspection probe into the tubes. Here, it is required to estimate the correct orientation of the robot's workspace plane with respect to the tube sheet plane. It is intended to use an IMU sensor to get the quaternion in-puts and use rotation quaternions instead of rotation matrices to rotate the link to the re-quired orientation. Using the data from the gyroscope, accelerometer and magnetometer, the pitch, yaw, roll will be calculated using the AHRS (Attitude Heading Reference System) algorithm. Later on, the orientation of the sensor will be visualized in real time.

PS-I experience: This gave me an opportunity to visit one of the most secure facilities in India. I never thought that I would visit a nuclear reactor but this chance made it true. I learnt technical and management skills which will be helpful for my career. I had a good interaction with my mentor who was very helpful and took his time to help us students to learn. As a whole , this was an amazing and memorable experience in my life.

Learning outcome : I learnt a lot in the field of robotics, quaternions and lot of new algorithms used in data science. This also gave me an exposure to the research field and how reality is different from classrooms.

PS-I is an exposure oriented course : True. I had immense exposure to various fields and work environments that are very useful for my career.

Name: Manikandan.C (2017A4PS0657H)

Student Write-up

Short Summary of work done : I worked on a project based on doing thermal analysis of cooling process of molten reactor fuel in liquid sodium
In the 2nd stage of Indian Nuclear Power Program, Fast Breeder Reactors will be deployed for efficient utilization of limited uranium resource. These rectors use liquid sodium as coolant and mixed (U,Pu) oxides fuel. In the unlikely event of a fuel meltdown, there is possibility that the molten fuel breach the cladding to reach the sodium pool. The objective of my project is to model the transient heat loss in the molten reactor fuel as it falls through the sodium pool. An idealized scenario is considered with a molten sphere immersed in a liquid such that it loses heat by conduction, convection and latent heat associated with phase change. Spherical symmetry is assumed for molten fuel and a mathematical model is developed using Finite Volume Method (FVM). This model is then implemented through a C++ program using iterative numerical methods to obtain a

temperature distribution along the radius of the sphere as a function of time. Time for complete solidification of the molten fuel is arrived at from the modal and the distance traversed through sodium during this time interval is estimated. A sphere of molten fuel of radius 2mm is observed to undergo cooling with complete solidification before reaching the core catcher.

PS-I experience: It was an awesome learning experience and I gained a lot of theoretical as well as practical knowledge from working on my project. My guide was very helpful and I got a project that was both interesting and learning oriented. The visits to the various places such as FBTR, PFBR, RCL etc helped us understand the practical implementation in industries.

Learning outcome : I learned various new concepts such as heat transfer analysis and numerical analysis. I also learnt to do apply the concepts that i learned in real world problems. The industrial visits also helped us get insight into how everything works

PS-I is an exposure oriented course : I feel like this statement is true. I was given problems similar to the ones being tackled by the engineers and scientists there although on a much more simplified scale. This and the industrial visits gave me valuable insight into the workings of the var

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PS-I station: Birla Polyfibers , Harihar

Student

Name: ROHITH REDDY (2017A7PS0139H)

Student Write-up

Short Summary of work done : We created a user friendly Dashboard for LIMS. We used Java programming language. Instead of using Java swing we used Javafx to create it . Javafx has many API's to make graphs . We then connected a back end database as the data source. Our Dashboard displays the control chart of a given parameter. A control chart has UCL and LCL and an average line to monitor the behavior of the given

parameter. To deploy it on the web we used a local Apache tomcat server so as to create easy access to Dashboard.

PS-I experience: We followed all the safety norms there and this created some sort of discipline which I didn't expect. Observed the way people behave,perform and the way a manufacturing industry works . The working environment has been very good. Whatever we do , it can't we completed with full efficiency without a mentor . Our mentor is highly supportive

Learning outcome : We learned how to use Javafx and learned basic queries to create and get data from MySQL database and we learned how to deploy a Dashboard on the web. We learned that there are many ready-made Dashboard like the one by power BI which provides us with many visuals and insights.

PS-I is an exposure oriented course : Definitely. We had a good industrial exposure and learned things from that. The way you adapt to conditions there and work accordingly is a major thing.

Name: Aniruddha Dutta (2017A1PS1365H)

Student Write-up

Short Summary of work done : My work in Harihar Polyfibres was in the Grasilene Division of the plant and my project mainly focused on the study and reduction of losses in the refrigeration system used in the plant. This was an important sector of the plant as this refrigeration system of this plant is the most important part as heat is generated at almost all of the regions of the plant and thus supply of chilled water is required. We identified all the issues regarding the refrigeration systems (Loose/Improper Insulation, Leakages, System losses, Equipment losses, etc). Based upon all of our observations, we found out a suitable and efficient solution and if implemented, will save around 25 LPA for the plant.

PS-I experience: The one thing that my PS taught me was Discipline. I had to show up at work precisely at 8:30 AM. Any kinds of delay was not tolerated. I felt that all the things that I had learnt in my second year was nothing compared to what happens in the real world. It was an eye-opening experience and I am very happy to have been a part of this.

Learning outcome : The most important thing that I learnt was that nothing beats a hands on exposure of your subject in terms of experience. The things that we study in our

classes and the things that we are able to observe in a plant and the factors affecting each and every process is immense. We learnt how each and every small decision needs to be taken carefully and should be properly thought of and how economic profit plays a huge role in making any changes in the plant.

PS-I is an exposure oriented course : I truly agree with this. After finishing few of our core subjects in the 2nd year, it is very important to have an actual idea of what happens in the real world. We realize that the world is not ideal and every process has it's own types of losses, benefi

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PS-I station: Birla White Cements , Jodhpur

Student

Name: shubh birla (2017A1PS0802P)

Student Write-up

Short Summary of work done : I have done my projects on air heater apparatus of the plant. There I studied the the structure and design details of air heater and collected the functional data through readings from the temperature sensors at air heater. Then I calculated the performance efficiency of heater for each week and calculated the average efficiency from these data. But due to shut down in between I also seen the recuperator (air heater) and kiln from inside and seen the brick lining process. Further I also visited the feeder, bag house and mill for inspection during shut down.

PS-I experience: great learning opportunity of specialized and established industrial works with a certain difficulties which test your creativity and out of the box thinking. It also gave me the current situation of the white cement market demand and supply chain which is important as the consumer satisfaction is the only goal of the organisation. The helping and supportive staff further simplified my problems and guided me throughout the project.

Learning outcome : efficiency calculation of the air heater
taking measurement of fan and its power calculations

kiln lining process and air heater internal functioning
line interlocking systems and circuits details
shutdown inspection process
feeder system
mill functioning details
bag house details

PS-I is an exposure oriented course : gives a very clear image of the corporate world functions and getting things done at extreme pressure.

PS-I station: BOSCH LIMITED , Jaipur

Student

Name: DEVESH SHARMA (2017A4PS0478P)

Student Write-up

Short Summary of work done : I did mainly 3 projects and 1 training workshop during my PS-1 here.
1) Trolley Standardization Project of Bosch Ltd Jaipur
2) Designing of new IC Stud Pin pressing station
3) 3D model of solar panel cleaning machine
1) In first project I made 3D model of almost every type of trolley of the plant and then generated its 2D drawing and render, which is going to be put in a brochure along with a bill of materials. Then this brochure would be used by General Managers to order any type of trolley they require, just like how we all buy electronic gadgets.
2) In the IC Stud pin pressing station, I did the designing of the station, made the 3D model and 2D drawing for manufacturing of parts
3) In this project I just made the 3D model for study and repair and maintenance of machine, solar panel cleaning machine.

PS-I experience: There were few learning opportunities but the work was way too much

Learning outcome : I got to know about Bill of materials, Engineering drawing.

I'm very well versed with Fusion 360 software now.
Different metals and their uses.
Wheels of trolley

PS-I is an exposure oriented course : It was not the case with me, I worked a lot, rather than having exposure of the company

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PS-I station: BSCPL Infrastructure Ltd., , Chennai

Student

Name: Yash Gupta (2017A2PS1033P)

Student Write-up

Short Summary of work done : My focus was inclined towards Structural Engineering of the project 'BOLLINENI HILLSIDE-2'. For that, I worked on developing my knowledge of a few important Civil Engineering softwares. I brushed up my STAAD Pro skills with the help of my seniors at the office. I also visited 'IRIS' construction site to bag in some on-field time. Moreover, my project was based on 'Product Specification' which focused on the various raw materials that are used for construction & their characteristics.

PS-I experience: I had a great time during my PS-1. The company that I was allotted is a very coveted firm in the Real Estate industry. I came across so many new concepts & experiences during my tenure, I'm very sure these will help me a lot throughout the entirety of my career as a Civil Engineer.

Learning outcome : I've always had a keen interest in Structural Engineering. My seniors at my office helped me get a good grasp of the important concepts of Structural Engineering with the help of important softwares like STAAD Pro & AutoCAD. I also got to visit the construction site a number of times which helped me get a better understanding of the process of execution. Also, my project focused on collecting lots of information, doing which I got to learn lots of new concepts & facts.

PS-I is an exposure oriented course : I'm in total agreement with this statement. I can give my example to justify this. Till the beginning of PS-1, I was just a Civil Engineering

student who had studied a few branch-related courses. But, in engineering, especially in Civil Engineering, it's

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PS-I station: Carborundum Universal Ltd. , Chennai

Student

Name: Nihal Reddy Pingali (2017A3PS1904G)

Student Write-up

Short Summary of work done :
My PS 1(BITS F221) journey began well. Each one of us have been allotted the plant where we're supposed to report to. There was an orientation session given by Raghuraman Sir. Mr. Natarajan (the plant head) has talked to us regarding himself and CUMI. We were then introduced to our mentors and toured the plant, going through the 5 modules (rubber, vitrified(small dial), vitrified(big dial), resin and SFC(super finishing) of the manufacturing process at TVT. The project I received is to understand the concept of temperature uniformity in a batch microwave oven machine and why we require it. Then, find factors to improve upon the same, which can be done using change in design, variation of product parameters with the machine, change in input parameters like specific heat etc. We began researching in the field of our projects by understanding the main objectives, and basic principle behind the working. We interacted with the mentor-in-charge and the workers at the allotted project stations to observe the process and draw the necessary values that can get us started on our research. Raghuraman Sir had occasional visits to the plant and we had a group discussions based on our projects as part of the evaluation, and oral open book quizzes based on CUMI and our projects. Moreover, we continued to work on our projects by collecting as much data required. After our Midsemester Review, we started to find out ways to implement our ideas for improving the problem. The problem behind disuniformity was what we discovered, called Moding. Moding occurs when the microwave electric field inside of the tube can no longer maintain the oscillation in pi-mode because of the disturbance by the reflected waves from the load, resulting in an unusual oscillation. After days of researching, talking to the workers of the plant, assistance from our mentors and working on the shaft floor, we came up with a solution called the Phase shifting method. The electrical field pattern located in the

waveguide (called mode) usually varies for different structures of the cavity and the characters of processing materials. The sliding short (connected to the end of the waveguide) can be exploited to change the spatial distribution of the microwave field in the waveguide system. As the terminal of the cavity is shorted, only standing waves exist in the waveguide. The position of the sliding short is an electric field node, λ/4 away from an antinode. The node and antinode reappear every other λ/2. Therefore, the distribution of the electric field in the cavity and the amplitude of the electric field applied to the sample can be changed by moving the position of the sliding short. In this way, it is then possible to generate different intensities of electric field in the position of the sample, avoiding hot or cold spots resulting from non uniform static electric field distribution. Finally after presenting our research and work done through PS to Raghuraman Sir and the plant head, we got satisfactory responses and were handed certificates regarding the same and the journey came to an end.

PS-I experience: I was satisfied with the PS I was allotted. I looked forward to understand the real life operations of the organization. Orientation was well organized and helped me understand the structure of the organization. I was able to understand the nature of work and projects.The learning environment between organization and students was very encouraging. I was able to adjust well to the team assigned. The experience gave me a chance to enhance my presentation skills and communication skills. I received adequate support from my mentors, instructor and batch mates. At last, my project was a relevant contribution to the organization.

Learning outcome : 1. Learnt the rubber module of manufacturing (flute grinding cycle), right from pre forming which includes mixing, moulding, and avoiding lumps to hot pressing to ensure compactness at the desired temperature(165 degrees celsius) to ensure uniformity in density and volume. From then, to woven curing and finally sent to the resinoid model.
2. Understanding the outline of microwave processing (one project) by studying the basic process that's involved at home and making comparisons to the microwave oven used in the module 2 of TVT. Next, how that leads to hot pressing (another project of other group) and most importantly, the role of temperature uniformity in both the projects.
3. Understood in detail about the working of the machine, the details of the components, and the importance of the machine in the process. Furthermore, I've understood the requirement of temperature uniformity (the problem to solve) in my project.
4. Learnt about the design and working of the machine, collected various data points of the sample throughout the week and learnt to make observations, and learnt details that can help us improve the problem stated in our project- inconsistent temperature uniformity.
5. Our idea has been developed from understanding that Maxwell's equations govern the propagation of electromagnetic field in the Batch Microwave, and moving the sliding short (connected at the end of the waveguide) by a displacement simultaneously is the same as changing the permittivity and permeability values by a constant, when we thought to apply the theory of transformation optics. Finally, the movement will influence the distribution of the electric field in the cavity and the presumed results will find an

improvement in the data temperature values at the arbore and periphery and find more uniformity.
6. Introduced to new concepts and instruments.
6. Lastly, Importance of responsibility, adherence to time, attitude, patience, and understanding your work at the station (applying practical knowledge).

PS-I is an exposure oriented course : Yes, it's definitely an exposure oriented course. Its been a great learning experience. Applying concepts you learn in college at the organization was amazing. Its truly enhanced my practical skills and improved my professional conduct.

Name: Amadhya Jain (2017B4A11023G)

Student Write-up

Short Summary of work done : The work was centred around abrasives which are roughly defined as hard substances used for grinding and shining operations. A specific typed of product produced in the company is Individual Disc Coating (IDC) which are used in heavy welding, steel, wood and glass cutting operations in the industry. The aim of the project was to identify the causes of the defects occurring in IDC and implement solutions to reduce the defects.

PS-I experience: My experience at Carborundum Universal was very pleasant. The one thing about the company which was the surprising to see was that irrespective of hierarchy of the company, everyone was treated the same way. Even as an intern, I got the opportunity to attend multiple corporate meeting with the heads of the various departments. I also got the opportunity to conduct meetings of my own with the shop floor workers to teach them about the defects. The projects offered in the company are specific to their own products and on the surface it may seem that your learnings from the project will not be useful after PS ends but what you learn while working on the project about data collection, analyses, validation will always stay with you. Additionally by working at this PS Station you'll learn how to conduct yourself in an official manner.

Learning outcome : Learnt how industries function and learnt how to conduct myself in an official environment.

PS-I is an exposure oriented course : Agree. PS-1 allowed me to directly work in an industry and learn the nuances of the production process. This cleared a lot of

misconceptions I had about the way that industries function and made me more aware of my interests. Textbook learning can never.

Name: Adithya (2017B4A41017G)

Student Write-up

Short Summary of work done : Reduced the cutter change and settings change time using VTR (video tape recording) study and ECRS concept by coming up with Kaizens (improvement plans). After coming up with the Kaizens, I took another VTR study by implementing the ideas and analysed the video for further improvements. Also did production study and time study for some machines in the shop floor. I also did a study comparing the different types of operators in the shop floor.

PS-I experience: It was really good. My supervisor was a really good guy and he taught me many concepts in industrial engineering and it's applications while giving me a hands on experience in production study and time study. The works I did for the project also boosted my knowledge about the working of an industry.

Learning outcome : Learned about how an industry works, about the TPM concept implemented by the company and the different ideas that comes with it. Also learned about industrial engineering and its applications. Learned how to do production study and time study and calculate the OEE of the machine.

PS-I is an exposure oriented course : Theoretical knowledge is important. But if you can't apply it, you aren't a good engineer. PS-1 provides a hands on experience on how you'll be working in an industry and it'll boost your presentation skills also. The way in which you should behave with y

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PS-I station: Cg Ppi Adhesive Products Ltd , Goa

Student

Name: Suraj Singh (2017B1A10881P)

Student Write-up

Short Summary of work done : The work was theoretical, and my project was on Bio-diesel. My job was to suggest some test methods to check for impurities in bio-diesel. Basic paper review and research work were done.

PS-I experience: The experience was great, and the whole session has given me first-hand exposure to the functions of the industry. It has introduced me to the applications of chemical engineering. Along with this, the role of other sectors like finance, human resources, production management, and R&D department was understood.

Learning outcome : Basic skills to solve some chemical engineering problem like the one to check for impurities in bio-fuel. The first-hand experience to work with industrial employees and to present my thought.

PS-I is an exposure oriented course : The exposure to the practical work out there is achieved during this course. How the industry work is and how different sectors collaborate for the smooth function of the industry.

PS-I station: Chennai Metro Rail Limited , Chennai

Student

Name: Aayush Tripathi (2017B3A30943H)

Student Write-up

Short Summary of work done : I worked under the mechanical, electrical and plumbing department of cmrl and I was made to study all the basic requirements of a well developed

system. Then we were made to study the solar system. The working and the current situation of solar panels in cmrl were made familiar. We made a project on the feasibility of the solar system if in future cmrl decides to switch to fully solar.

PS-I experience: PS-1 was a wonderful experience. It made us familiar with the industrial work of cmrl. The faculty here was very helpful and they supported us in the best possible way.

Learning outcome : We learned a lot about solar panels and the working of all the sections of cmrl. Solar was our major field of study. The working, the system the feasibility of solar was worked upon.

PS-I is an exposure oriented course : Well yes it is. It tells you about how an industry works. It exposes you to all the pros and cons of industries and it helps you in adjusting so that one doesn't have issues in future.

PS-I station: Concept Infracon Pvt. Limited , Gurgaon

Student

Name: Divyam Goel (2017A2PS1354H)

Student Write-up

Short Summary of work done : To estimate the total quantity required of various material such as Brickwork ,column , footing , beam , slab , plastering ,shuttering etc. and total cost required to make a four storey building . Another project on which I was working -AMT waste water Treatment Plant in which to Improve treatment quality by increasing treatment efficiency, Significantly reduce treatment cost, Increase throughput by multiples compared to unit treatment facility and how to handle unprocessed pollutants.

PS-I experience: As my internship draws to a close and I reflect back on all I have learned, I realize what an excellent experience this has been. I gathered much knowledge

in the classroom, but a hands-on approach has been invaluable. I am truly grateful for this opportunity.

Learning outcome : I learn, How the working of corporate world work and learn about consultancy services in the field of civil engineering related to Bill estimation , hydro projects and waste water treatment

PS-I is an exposure oriented course : PS-1 helps us to to explore much more about the corporate world. PS-1is a grest way to network with people in the industry.

PS-I station: Cosmos Impex (India) Pvt.Ltd , Vadodara

Student

Name: Tejas Shah (2017A3PS0024P)

Student Write-up

Short Summary of work done : The Project consisted of developing a proportional derivative (PD) algorithm for the adaptive control of the feed rate of a CNC Vertical Machining Center, based on spindle cutting load monitoring. The main aim of the project was to decrease the cycle (operation) time of a CNC machine process, thus increasing productivity. It included the analysis of the various load operation regions of the machine, development of an algorithm for updating feed rate dynamically, and designing of a Ladder Logic of the algorithm for a Programmable Logic Controller(PLC). Also carried out was the tuning of PD control parameters and actual testing of the Ladder Logic on a CNC machine, by integrating it into the PLC of the machining center. An object made of Mild Steel was processed multiple times, and trends of the tuning parameters were noted. Clear graphs, showing the difference in times and performance with and without the adaptive control feature were plotted in the results. These highlighted a decrease in time of close to 18% due to the feature. Also seen was a significant increase in tool operating life, and decrease in power consumption by the machine.

PS-I experience: It was, first and foremost, a highly enriching experience. I had a clear and well defined project, which also had a lot of scope for learning and experimenting.

Throughout the project, I was always facing new challenges, but never those that were beyond my ability. The main aid in these were the mentors, with whom I had constant contact throughout the PS-1 tenure. They were available at any and every day for guidance and advice on any problem I faced.
I was also provided with great facilities for my project. The PLC programming software required was provided by my mentor, and I also had direct access to a CNC machine and components for all my testing purposes. All in all, I learnt a great deal, and also felt like I helped the organization, in however small a way it may have been.

Learning outcome : Firstly, I learnt a lot about the components and working of CNC machines. I learnt how to design and analyse Proportional Derivative control systems. After the development of the algorithm, I was given the resources to understand how to make PLC Ladder Logics, and did the same on a PLC Programming Software provided by my mentors. Finally, I learnt to operate a CNC machine to some basic processes also, which was required during my testing tasks.

PS-I is an exposure oriented course : I completely agree with this statement. I was directly exposed to the proper workings of a industry, and I feel I learnt a lot throughout. I also had frequent contact with the upper management of the company, which may generally be unheard of for a second

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PS-I station: Daimler India Commercial Vehicles , Chennai

Student

Name: Sparsh Porwal (2017A4PS0186P)

Student Write-up

Short Summary of work done : My PS station is an automobile plant, particularly a truck plant. Trucks are assembled on assembly lines with different lines for different subsystems such as chassis, cabin, transmission etc. The assembly lines are fed with parts which need to be assembled onto the basic structure with which the line starts. The method by which parts are fed onto the assembly line plays a significant role in the efficiency of running line. The project i worked on involves sequenced line feeding of parts

to ramp up the production line in order to eventually increase the production volume. Rather than maintaining line side inventory of each variant of part, the parts are proposed to be fed sequentially to the assembly line, directly from the Logistics Center (being sequenced in the Logistics Center Supermarket layout). This would prevent the unnecessary line side space occupation by part variants not going to be used in the near future and also it would lead to efficient utilization of material handling resources.

PS-I experience: Apart from learning, PS-1 was a good experience overall. It inculcated in me, the adaptation to a more mature lifestyle and taught me how to strike a work- life balance while working in a corporate environment. I got to experience the practicalities and dynamics of corporate work environment.

Learning outcome : My learning outcome from the PS-1 course is the pool of technicalities involved in running a production plant and the concepts those play an important role in a production plant. Running a production plant involves more of an engineering and management fusion rather than just core engineering research which is performed in a separate department.

PS-I is an exposure oriented course : Surely PS 1 is the medium of first exposure to the industry scenario in maximum number of cases. It brings to realization how practical applications of engineering differ from the concepts learnt in the class and also that apart from research, there are m

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Name: Divyansh Sharma (2017A4PS0421G)

Student Write-up

Short Summary of work done : The considerable part of my project at Daimler India Commercial Vehicles was to help the facility maintenance department in resolving recurrent breakdown problems created in assembly line equipment. This involved study, observation and analysis of root problems and test run on proposed models. The company utilizes the largest chain conveyor system in India for Heavy Duty Trucks (HDT) covering a length of 292 meters, which has a total of 62 assembly stations, with each station having specific and custom-built equipment. I studied 17 major equipment and helped them in framing a methodology to track their functioning through MES (Manufacturing Execution Systems). I worked on the prevention of radio frequency interference in the Electric monorail system by using dynamic beam forming and spatial multiplexing. I was involved in building an equipment breakdown contingency model for windshield manipulator (pneumatic equipment), which is used for mounting windshield on

HDT Cabin, through 3-D modelling and simulation (performed using Ansys Spaceclaim and AutoCAD Fusion 360). I presented a formal report of the contingency model, mentioning the cost, investment, bill of materials, fabrication techniques to the head team at the maintenance department. I also did a collab project with some other in-plant trainees on designing a new improved prototype of a fixture, which is used to mount HDT Cabin on pre-paint Dip-Skid trolley. We actually manufactured the prototype in the company's metal fabrication area and conducted five test runs, out of which four were successful. One of the successful tests was attended by the Head Of Maintenance Department.

PS-I experience: This industrial experience was my first-time step into a professional field. Through their orientation program, I got the opportunity to visit every department of the organisation and get a know-how of the manufacturing processes, materials, equipment, quality checks, safety standards and work environment. This programme did really enhance my skills particularly in communication, presentation of information, thinking skills, how to design with real-time constraints and much more. The testing process; the quality feedback loop system and total productive maintenance were really fascinating to observe. The work culture is pretty stern here and they expect you to follow the same. There are restrictions on visiting certain places and you have to have official permission for that. Apart from this, the managers, supervisors and team were supportive, approachable and frank in sharing knowledge with me to which I am thankful. They did every possible task I needed to implement for my model testing purposes. The food here isn't bad either, it is routine food and healthy. This internship has given me new insights and motivation to pursue a career in mechanical engineering.

Learning outcome : During my training period, I learned a lot from observing, reading documents and manuals and by sharing my knowledge with my friends.
The list includes manufacturing processes, truck assembly and subassembly components, equipment like KUKA industrial robots, manipulators, hoists, 6S safety checklist, manufacturing materials and components, pneumatic and hydraulic circuits, PLC logic circuits, professional environment, work ethics and plenty more. More importantly, it was my first time in actual when I was able to observe the entire truck assembly processes and contribute in some form of optimisation to their current models.

PS-I is an exposure oriented course : I would say my PS was an exposure and real-time knowledge application based course.

PS-I station: Divgi TorqTransfer Systems Pvt. Ltd, Shivare , Pune

Student

Name: Apoorv Puranik (F2017ABPS1088H)

Student Write-up

Short Summary of work done : 5 S system is adopted to improve the efficiency and working a workstation.
5 S stands for :- Sort, set in order, shine, standardize and sustain. If these aspects are implemented in a given workstation, it greatly benefits the overall productivity of the same. There are number of small things that keep hampering the smooth running of a workstation. 5 S helps in eradicating such abnormalities resulting in improved efficiency of the workstation. This system is used in all multi-national companies and has bore great results in each case.

PS-I experience: I got to know how full fledged company works. How many different minute operations that keep on going in the company and how these are vital for the smooth running of the company.

Learning outcome : I got to know all the etiquettes that are to be followed in corporate life. I got to know the concept of '5S' and also concepts like 'Process Capability' and 'Process Capability Index' and their implementation too.

PS-I is an exposure oriented course : It surely is. There are many small things I learnt here which will help me greatly in future jobs. I have a fair idea now of how to go about in corporate life.

PS-I station: Divgi TorqTransfer Systems Pvt. Ltd. - Bhosari , Pune

Student

Name: Aakash Agrawal (2017B2A40889P)

Student Write-up

Short Summary of work done : Learnt SPC calculations, made some history cards and also learnt and simulated the assembly line on the shop floor on the flexsim software required for exercise 2. I also learnt on how a relatively big company works, the professionalism required to maintain, the expectations and the how to maintain various things in order to run the company successfully.

PS-I experience: It was a very good learning experience, giving me exposure to various things about the working of a company along side giving me practical knowledge in production of transfer cases.

Learning outcome : i learnt about spc calculations, history cards and the basic working of a company and also simulation on flexsim

PS-I is an exposure oriented course : I completely agree with the statement as this course has given me so much exposure and insight into the working of a company and things required to do it successfully.

PS-I station: Escorts , Faridabad

Student

Name: Aman Lamba (2017B5A40825P)

Student Write-up

Short Summary of work done : My field of project in Escorts was transmission production unit in powertrac tractors. The main job was to understand the operation being

carried out on lines. The assembly lines in transmission section were differential line, axle line, crown wheel line, gearbox line, hydraulic line and main back-end line. The most important line among all these was gearbox line. There were 96 models of gearbox, it was a great difficulty observing that line being the busiest line.
The most crucial part of my project was reasoning. We were required or expected to ask question regarding any doubt occurring in our mind. The title of our project was standard operation improvement through NVA reduction. NVA refers to Non-value addition activities. We were required to spot any abnormalities in operations. Other than these five lines, there were other department such as production planning department, quality control, equipment maintenance, engineering drawing. We studied about these department as a part of our exercise 1 and 2. The initial days at escorts were tough as the content was too much to grasp. Later, I started studying about the things carried out on the assembly line, which helped me in my understanding of the assembly lines.

PS-I experience: I learned a lot of things about automobiles not only just tractors. I developed a habit of finding the answer to my own question. Getting away from the books and learning from the real world was a great experience.

Learning outcome : I learned about the power transmission in automobiles. Basic functioning of engine, gearbox and hydraulic lift

PS-I is an exposure oriented course : I believe in above statements as it require a lot of efforts to seek knowledge from people working around us. These improved our interaction with some stranger person and ask for any kind of help. PS-1 is quite interesting course if we put our effort in i

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PS-I station: Gates India Pvt. Ltd. , Faridabad

Student

Name: Ashish (2017B5A30686P)

Student Write-up

Short Summary of work done : I was assigned a project under the Quality Department. My project's objects was to evaluate the process capability indices and plot X-Bar charts and Range charts for a given manufacturing process using Statistical Process Control (SPC) and suggest improvements in the process to eliminate any defect in the process.

PS-I experience: This workplace experience has also helped me to gain insights about how theoretical knowledge is practically applied in the industry for manufacturing. The multi-disciplinary nature of work has motivated me to maintain a general understanding of disciplines such as management, accounting, and statistics.

Learning outcome : The project helped me in understanding how every step of the process should be scrutinized, and a continuous trend of evaluation and improvement can take production to the next level.

PS-I is an exposure oriented course : PS -I has helped me to get a first-hand experience on how the industry works. The work culture and helpful attitude of employees have aided me immensely in getting a deep understanding of the industry. I cannot stress enough on the importance of soft skil

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Name: Shashwat Gupta (2017A3PS0291G)

Student Write-up

Short Summary of work done : The project our team was asked to work on by the Gates logistics team is to look for
innovative ways to improve the productivity of the manual packaging assembly line and to estimate the average labor cost per product packaging.
The work involved understanding some key concepts of supply chain management like the part process matrix and work-time analysis. These techniques were used by us in order to determine the bottlenecks in the assembly line and helped us to estimate the correct number of products being packaged on a daily so as to improve the cost of packaging per piece.

PS-I experience: This workplace experience has also helped me to gain brief insights about how theoretical knowledge is practically applied in the industry for manufacturing. The multi-disciplinary nature of work has motivated me to maintain a general understanding of disciplines such as management, accounting, and statistics.
The mentors were really enthusiastic and helpful. They were a constant source of motivation and people whom you could really look upto.

Learning outcome : The project helped me in understanding how every step of the process should be scrutinized, and a continuous trend of evaluation and improvement can take production as well as packaging to the next level.

PS-I is an exposure oriented course : PS -I has helped me to get a first-hand experience on how the industry works. The work culture and helpful attitude of employees have aided me immensely in getting a deep understanding of the industry.

Name: Rahul Ranjan (2017B5A81374H)

Student Write-up

Short Summary of work done : The objective of the project assigned was to look for innovative ways to improve the productivity of the manual packaging assembly line and to estimate the average labour cost per product of packaging.
This project involves detailed work-time analysis of the packaging process to identify the activities on the critical path and then find the ways and means of optimizing the time taken for individual events on the trail and thereby maximizing the production and reducing the overall cost while maintaining the quality. The key concepts that were utilised during the project include:
1) Part-Process Matrix: A simple yet effective tool to identify the rate-determining step.
2) Time-Study: It is a procedure used to institute a time customary to execute a given assembly task.
3) Workforce Management: Workforce management is necessary for an assembly plant as every class of employees and workers has to be dealt with differently.
4) Inventory Management: This involves administering non-capitalized assets, or inventory, and stock items.

PS-I experience: This workplace experience has also helped me to gain insights about how theoretical knowledge is practically applied in the industry for manufacturing. The multi-disciplinary nature of work has motivated me to maintain a general understanding of disciplines such as management, accounting, and statistics.

Learning outcome : Our project helped the company in improving the price per piece of packaging and in minimizing the time taken for packaging on various stations in the assembly line. The project helped me in understanding how every step of the process

should be scrutinized, and a continuous trend of evaluation and improvement can take production to the next level.

PS-I is an exposure oriented course : PS -I has helped me to get a first-hand experience on how the industry works. The work culture and helpful attitude of employees have aided me immensely in getting a deep understanding of the industry. I cannot stress enough on the importance of soft skil

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PS-I station: Gauhati Refinery , Gauhati

Student

Name: Chinmay Agarwal (2017A7PS0033P)

Student Write-up

Short Summary of work done : I worker on a project to create a programme to detect and store License Number of the Vehicles entering the Refinery Premise.

PS-I experience: It was a great experience to get such an exposure. We got to work in the corporate culture and had first hand experience of everything. It taught us a lot of things other than just work as well. Going to a completely new city and then adjusting there with everything along with meeting deadlines, giving presentations and everything could ever be so interesting, I never imagined.

Learning outcome : I learned Python and OpenCV. Also, it helped me improve my communication and problem-solving skills.

PS-I is an exposure oriented course : I strongly agree with this as per my experience. I don't think that learning was ever so interesting and engaging. Here, the focus was more on the application part than the theory one which is something which I was longing for.

Name: Rajababu Saikia (2017A7PS0007P)

Student Write-up

Short Summary of work done : In PS-1 we work on a project related to the concept of object detection. Our primary goal was to develop a system to recognise and detect the important road signs within the IOCL Premises. We used OpenCV with python to build the model. What the final project does is it takes a video and take screenshot at fix interval. Then those still frames are processed with the help of image processing concepts like Contrasting, binarization etc to look for the possible road sign in the image. Then that road sign is compered with the available signs in the dataset and if there is a matching, necessary text is prompt out. Otherwise it shows unknown sign.

PS-I experience: Considering the fact that my station was a oil refinery, where not much CS related work is required, my experience was pretty decent. We didn't have all the facilities for developing our project, but got all support and guidance from the mentor. Mentor was really encouraging in the entire duration. We got the opportunity to learn machine learning and develop a project. Along with it, we got total support from our instructor. And the way he guided us for evaluation components like GD and seminar is definitely going to be helpful for our entire career. So it was a great experience overall.

Learning outcome : During ps I learnt about machine learning and got some knowledge about development of projects under this domain.
Along with it I gain some completely new experience of formal presentations, report preparation and group discussion.

PS-I is an exposure oriented course : After doing 2 years of engineering and learning different courses, this is the first opportunity to apply that knowledge.You have to be professional in your work and work as a responsible individual. You have to work according to the expectations of the organization.

Name: Pranat Kashyap (2017A3PS0281P)

Student Write-up

Short Summary of work done : I visited various electrical units of the Guwahati refinery- telecom unit, thermal power station, delayed coker unit, electrical testing unit and electrical workshop. I also got briefed on the various field instruments used in the refinery by the instrumentation unit. I also studied all the major telecommunication facilities available in the refinery.
The was given a project in the telecom unit to work upon the PMRTS system or walkie-talkie system and improve its efficiency, range and inclusivity.
At first, I studied the PMRTS system in the refinery in depth. I tested the signal strength, power and lag and tried to spot the loopholes in the system. I found the range of the system smaller than required and the inclusion of units lesser than capable. I then studied the factors which can be improved to increase the range and include more units in the PMRTS system. Finally, after analysing the feasibility of the solutions, I suggested three solutions to improve the effiiency, increase the range and include more units in the system.
1. Invest in setting up Bi-directional amplifiers
2. Invest in buying more frequency bandwidth
3. Invest in extending the repeater network
The telecom unit of the refinery accepted the solutions and have proposed the finance department to apply it in the refinery.

PS-I experience: The experience was very good. The PS instructor, Dr. Paritosh Shukla sir was very supportive and helped us in every possible way. The station mentors and project guide tried their best to find time out of their busy schedule to help us in learning more and working on our project.

Learning outcome : I learned about the role of electrical, electronics and instrumentation engineers in the refinery. I observed, studied and learnt about telecom unit, thermal pwer station, electrical testing unit, electrical workshop and delayed coker unit. I also studied the various field instruments used in the measurements in a refinery. I studied the various telecommunication facilities in the refinery and studied the PMRTS system or walkie-talkie system with extra depth.

PS-I is an exposure oriented course : I agree

PS-I station: Grasim Industries , Nagda

Student

Name: Mamta Gurjar (2017B3TS1218P)

Student Write-up

Short Summary of work done : I have done project on " Food Basket Survey" . The study was conducted to get detailed idea about expenditure pattern resources and amount of income of the population of people in nearby villages the factory in Nagda teshsil. The food basket survey helped to calculate the Basic Need wages , Living Wages and Minimum Wages in the region as per rumeration requirement of SA certification .

PS-I experience: I enjoyed the survey very much and learned to interact with different types of people . I visited backward areas where people suffers from lots of problems under poverty .

Learning outcome : I actually learn the definition of poverty and experience the a world where people do hard work only for providing food to their family .

PS-I is an exposure oriented course : Yes I am agree with this due to various experiences.

Name: Vidula Rajain (2017B4A11582H)

Student Write-up

Short Summary of work done : Our project was- Feasibility and Possibility of using Dilute Caustic in place of Strong Caustic for Viscose manufacturing.
ABSTRACT:- This project involved the study and examination of a more efficient way to dilute caustic soda in the plant at a lesser cost. Our main objective was to figure out the difference in the cost and equipments required if instead of taking 40.5% Caustic from the Chemical Division and diluting it ourselves to 18%, we take 32% Caustic directly from them. We had to analyse the feasibility and cost of the alternative system suggested by us. After studying various processes and looking at both the advantages and disadvantages of the alternative system, we came to the conclusion that we should shift to taking 32% directly from the Chemical Division as it will be profitable to us in the long run, it is simpler and more efficient. The Chemical division ends up saving a huge amount

of money. Since both these plants are integrated, when looked at together we would save a huge amount of energy and resources by shifting to the alternative system.

PS-I experience: This was a very different and learning experience. I am glad I got to experience the life in a Core Chemical Engineering Plant. Practical knowledge is very important, as now I am more interested and motivated to get the theoretical knowledge as well.
Other than learning things related to my stream , I also leraned how to balance both work and life. Through PS-1 I gained an insight into how the future would be and now I am more confident and better equipped for it.

Learning outcome : I got to see the main plant processes myself and applied my theoretical knowledge . We did many Problem Solving studies where we were given a specific part of the plant and were told to come up with better and more efficient methods. I was lucky enough to be able to Visit the Grasim Chemicals Plant as well, since my project spread over both the plants.
Though we were given a brief introduction about every process in the plant, but since my project was mainly focused on the production and processing of Caustic, we were given an in depth knowledge about that.

PS-I is an exposure oriented course : It is definitely an exposure oriented course. We were exposed to how life will be in a Core Plant. Now that we have more practical knowledge , our studies would become more interesting since this exposure has inculcated an interest to understand such proc

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Name: Paridhi Chaturvedi (2017B5A20920P)

Student Write-up

Short Summary of work done : Project was rehabilitation of RCC structures. We learned about the basics of construction, meaning and elements of RCC, books and expert support was provided for the same. Then we visited the industry to check the conditions of the damaged RCC structures and methods used in the industry for rehabilitation were explained. All the prices and products used were also explained in detail. Finally, on a personal level, we learned about rehabilitation techniques of other industries and emerging technologies around the globe. Regular quizzes, group discussions, presentations and report submissions also took place which helped us to improve our communication, presentation and learning skills.

PS-I experience: PS-I helped us all to understand working of an organisation, understand the discipline and commitment required to work in any organisation and also taught us how to manage work and other components of life.

Learning outcome : Project was rehabilitation of RCC structures. We learned about the basics of construction, meaning and elements of RCC, reasons behind corrosion and damage of RCC structures and ways to prevent them. Finally we learned how to rehabilitate damaged RCC structures and new and emerging techniques in used around the globe in order to do so. Communication, presentation and learning skills were enhanced by the medium of quizzes, group discussions, presentation and report.

PS-I is an exposure oriented course : PS-I gives students exposure in terms of work, life in a different city and learning. It helped in an overall development of all the students by conducting quizzes, group discussions, presentations, and report submissions.

Name: Rashi Yadav (2017D2TS1232P)

Student Write-up

Short Summary of work done : I worked under CSR department of grasim with my project that aimed to create awareness among rural areas and villages about HIV AIDS and tuberculosis it's prevention and cures also we worked towards adscolecent girl programs also post our village visit we plan to run an educational drive among the village students as our own personal initiative in addition to the assigned projects.

PS-I experience: The PS-1 experience had been really good. I have learned a lot of things working under CSR department about the functionality of a department in such a big industry and the different works undetaken by CSR department of grasim industries in recent years and also how they are helping people improve their way of living by helping them avail the facilities offered by government in the form of different pradhanmantri yojanaye.

Learning outcome : There has been various learning outcomes throughout this course
1. We got to know about the management and functioning of CSR department of grasim industries and overview of the entire CSR of Aditya Birla group.
2. With the help of provided project we have been able to get more knowledge about these problems and their occurrences also we have got deeper insights of these problems there causes and it's effects.

3. After our survey visits to the villages we have realised that the basic problem is lack of education among the rural youth and also how grasim has strived hard to create awareness about all of these problems to the people and made sure that they get proper treatment.
4. One major learning outcome that we have learned is about the lack of awareness spirit and enthusiasm towards education specifically for the girl child even after many initiative of the government but on the happier part the change is coming but it is very slow and incremental and it needs proper attention to grow.

PS-I is an exposure oriented course : True it is totally an exposure orientation course as with the help of this course I was able to do field work and get such valuable learning outcomes from it also with the group discussions and the presentations designed in this course made it easier for

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Name: Bhavya Sharma (2017B5A10870G)

Student Write-up

Short Summary of work done :
The project is a part of the water treatment department of the industry, it is mainly centered around prevention of the formation of Algae in the water treatment pipelines. During the purification process, especially close to the parts which are exposed to sunlight, Algae tends to develop in the pipelines, choking the pipelines and membranes and reducing the efficiency of the plant. In the RO process the RO membare is supposed to demineralise water, basically refine it enough to remove particles upto the sizes of 500 nanometers. Algae tends to choke these membranes.
This also causes the chlorine suspended particles to not be cleared out completely, leaving the outcoming water as chlorinated.
There are several steps in which this algae is removed ,To prevent formation of the algae in the Primary Clarifier process the primary treatment is done which reduces the total suspended solids in the water which reduces the algae formation.The Primary treatment processes used here are settling and flocculation.The chemicals used in primary clarifier were PAC (Poly Aluminium Chloride) and Flocculants .
PAC is used at a concentration of 70 ppm-80 ppm.
Apart from this there are two more solutions ,we found a new technique which can replace primary clarifier.Hydro International offers an alternative form of primary treatment that uses a screening process instead of gravity settling.
Also, we can use alternate algicides like GreenCleanFX
GreenClean Granular Algaecide

Benefits of the alternative algicides are ,
They are Non-toxic
Comparatively cheaper
Don’t affect the RO membrane

PS-I experience: PS at Grasim industries was a very enriching experience for me, i learnt the industry protocols and functioning. Data analysis of the data of all the suspended particles was a key part of the project, as well as laboratory testing of the water used. I build not just technically skills but also social work skills.

Learning outcome : I learnt the following skills from my PS-
- Data analysis
- Laboratory research using titration and measuring
- process of testing alternate methods on samples.

PS-I is an exposure oriented course : I agree with the above statement, based on the lab experimentation done by me.

Name: Khushi Saini (2017B5TS1219P)

Student Write-up

Short Summary of work done : My project was "Tripping and Interlocking in Power Plant" in this, we worked on the problem regarding the measurement and controlling of Drum Level of Boiler so that Boiler Tripping could be reduced to a significant level. This is instrumentation and mechanical based project. The currently working system in the plant are Differential Pressure Transmitter(DP Transmitter) and Hydrastep but both have limitations. In DP Transmitter though it is redundant still some time to wrong transmitters eliminates the right one if there is some leakage and hence then the DCS shows wrong reading. In hydrastep since it's in steps it cannot be used for measurement it just shows the level. And the system suggested by me is RADAR. it shows accurate costly the only disadvantage it has is it's quite costly.

PS-I experience: PS1 provided me a lot of exposure on the industrial scale. It has introduced me to industry work and industrial development. It has also helped me to understand the problem faced by Industries and what determination one should have to solve it. It has also increased my communication, interpersonal and intellectual skills.

Learning outcome : Learned the procedure for steam production and energy generation on the industrial scale.
The practical importance of tripping and interlocking and how it makes the industry financially stable, as it prevents as well as alarms us about any forthcoming damage so that it can be controlled.

PS-I is an exposure oriented course : PS1 provided me a lot of exposure on the industrial scale. It has introduced me to industry work and industrial development. It has also helped me to understand the problem faced by Industries and what determination one should have to solve it. It has al

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Name: Pragati Singh (2017A5PS1083P)

Student Write-up

Short Summary of work done : I got my project in the Chemical Laboratory department of Grasim Industries Limited, Nagda, MP. My work was to analyse Effluent Treatment Plant samples. Performing titrations was an integral part of all the experiments performed. Initially I was just allowed to observe the experiments while they were performed by professionals but later, I was given illustrative samples to test. Finally, when I became a proficient in all the technical/practical knowledge about each of the experiments, I was given official samples to assess whose data was reported to the Pollution Control Board of India. It was extremely intriguing to perform around 40 titrations every day.
My next half of the project includes data analysis. I just didn't get a chance to analyse the data that I recorded but I was also trusted with previous year data that helped me to plot regression curves of various elements that were supposed to be documented and were analysed. I made a statistical model explaining the disparity in the specifications of the samples over the years and the possible reasons behind them.

PS-I experience: PS-1 overall was an admirable experience. It was a first hand in-plant and industrial experience for me. I assimilated that what actually makes an industry is not just the people working in it, but also the customers. I was inducted about all the departments that amalgamate to form Grasim Industries Limited. I understood the demeanour needed to work in an industry: Safety is the most important aspect that should be kept in mind when you are working in a plant. And, this was not just taught to us but was also taken utmost care of. Everything helped me acquire a knowledge of the professional world.

Our PS Instructor entreated us to watch a Stanford video lecture series on Entrepreneurship. It educated me the whole nine yards about start-ups. The quiz helped me gain knowledge about the Aditya Birla Group and Grasim Industries. The group discussions involved sharing of learning and taught me how to spotlight my ideas in a group. I developed effective presentation skills that helped me present better and keep the presentation interesting.
In short, PS-1 sparked the entrepreneur inside me and motivated me to walk towards being an entrepreneur.

Learning outcome : This opportunity not just gave me practical knowledge about subject matter but also helped me improve my personality as a professional. It taught me the mannerisms and etiquettes of a white-collar individual.
Firstly, it gave me a lot of insights about titrations and laboratory experiments. I mastered MS-Word, MS-Excel and MS-PowerPoint. I also gained complete knowledge about Statistical Modelling, Regression Curves and Data Analysis.
Secondly, the evaluative components helped me remain sincere and consistent in my work. The quizzes forced my brain to learn data embedding. The group discussions involved sharing of learning and taught me how to spotlight my ideas in a group. It furthered my thinking, learning, problem solving, understanding and literary appreciation. The presentations and seminars helped me develop effective presentation skills and gave me confidence to be a public speaker.
Thirdly, I learned to work in a group. It made a better leader as I was responsible enough to make others in my group work and manage equal work distribution at the same time.
Last but not the least, it ignited a flame of Entrepreneurship and gave me a burning desire to innovate, achieve and lead.

PS-I is an exposure oriented course : Yes, PS-1 is a completely exposure-oriented course. It gives the students the first taste of professionalism. For me, it was an insightful industrial experience. Getting exposed to an in-plant platform was a novel and fresh encounter.

PS-I station: Grindwell Norton Ltd , Bangalore

Student

Name: Siddharth Panpaliya (2017ABPS0995P)

Student Write-up

Short Summary of work done : Project assigned to me was to understand the technical aspects of grinding and other abrasive processes, comprehend what necessary output and functionality is expected from a particular grinding wheel. I also had to map various industries that are into aerospace component manufacturing who are potential users of Grindwell Norton products and conduct trials. I was able to understand the requirements of different industries, the reason behind their choice of products,etc. I also visited a lot of plants and shop floors where I could see and understand how manufacturing processes were carried out for any industry.

PS-I experience: The experience was wholesome, apart from simply doing my project, I was also given an opportunity to visit many industries and their shop floor to actually understand how a manufacturing process is completed. I was also able to relate a lot of practical scene to my course on Manufacturing Management, as there was detailed plans of plant layout, scheduling, inventory management, etc. In a nut shell it was an indulging and a learning experience.

Learning outcome : I was able to understand how a manufacturing unit functions, what are the major and minor considerations to be kept in mind while transforming the raw materials to desired goods. I was able to understand the different manufacturing processes that go into making a product. My interaction with the operators helped me deepen my understanding on the technical difficulties they face and with what possible solutions they are guided with to rectify those difficulties.

PS-I is an exposure oriented course : Its aptly stated. It does give a student a wholesome overview of any manufacturing based company. It helped me understand why different industries chose different processes to manufacture their product, the essential requirements to run an industry.

PS-I station: HAL ROTARY WING , Bangalore

Student

Name: Krishnadev Reghunath Menon (2017A4PS0387P)

Student Write-up

Short Summary of work done : The PS consisted of two sections. Around a month was spent getting to know the detailed working of the helicopters designed in HAL and the latter half was spent working on a project . A lot of exposure to the various subsystems that work in conjunction, taking care of the different aspects of helicopter functioning like, flight control, hydraulics, power plant(engine), etc.We interacted with the various personnel in charge of these subsystems and were taken to the prototype hangar where the technical details were elaborated showing us the corresponding parts of the helicopter. A report was made and submitted inclusive of all our learning from the first month. Then a project was allotted about gerotor pumps. We worked in a group and generated a gerotor profile and calculated the requisite torque and volume flow rate to measure upto the design constraints.

PS-I experience: We got the much needed exposure to the professional world. The culture existing in the workplace of a large company like HAL and the various hassles and benefits of the policy of rigorous documentation practiced there. It was fun getting to know how it was to work in an office and offered tremendous exposure to the practical implementation of the theoretical concepts learnt in the classroom. There were a few difficulties initially due to the tight security and a few lapses in documentation but overall, it was a good learning experience.

Learning outcome : I learned quite a lot about the detailed functioning of a helicopter and the challenges faced in running a big organisation like HAL. Working in a team for a project under the supervision of a mentor was good experience too. It is much need exposure to the work profile of a design engineer. It provided valuable insight into the corporate atmosphere that is characteristic of the modern workplace.

PS-I is an exposure oriented course : It does provide the much needed exposure to the professional world. It gives a student a fair idea of what to expect from their professsion

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Name: Arpan Bumb (2017A4PS0392P)

Student Write-up

Short Summary of work done : The first part of the training was about the general working of helicopters and sub-systems involved. This included theoretical aspects as well as the issues and design considerations in each sub-system. The other part involved designing a profile for Gerotor Pump on MATLAB and performing basic analysis such as torque and power calculations.

PS-I experience: PS-1 provided an insight into the corporate world and understand work culture prevailing in HAL. It also provided opportunity for hands-on-learning and understand various aspect of work.

Learning outcome : Opportunity to acquaint ourselves with various software such as Gerotor design studio and MATLAB. Learning the application of the various theoretical concepts learnt like theory of gearing, instantaneous centres etc. in practical situations.

PS-I is an exposure oriented course : PS-1 definitely is based on exposure oriented learning, it provides opportunity to work in corporate world hence gaining exposure which will be beneficial in future.

Name: Mrudul Kulkarni (2017A4PS0185P)

Student Write-up

Short Summary of work done : Learned about the various components of a helicopter and there functions. Understood the function of conical housing in a Light Utility Helicopter. It is mainly used to house the main rotor shaft and the bearings which support it. Learned how the static and fatigue test is performed on the housing . Further studied and understood the construction and working of hydraulic actuators used to apply loads on the housing. Also learned about the hydraulic system and its components which include load cell, cooling tower, LVDT(Linear Variable Differential Transformer) , Distribution block, Hydraulic Manifold, Cooling tower and the servo valve. Further understood the construction and working of the strain gauges used to measure the strain values and their sticking onto the test specimen. Studied about the data acquisition system. Understood the concept of fatigue crack and fatigue crack growth model. Also understood Failure Mode and Effect Analysis and how it is performed. Learned how the fatigue life is estimated using SN curve and Miner's rule. Found out the various reasons for the cracks in the conical housing using fishbone diagram analysis using the Quality control software Minitab. Further studied various quality aspects in an industry and various quality control strategies like the Six Sigma approach. Read and went through several case studies on the helicopter crashes and how flight safety defect investigation

is done. Finally performed the force analysis on the conical housing and identified critical areas with high stress.

PS-I experience: It was a great learning experience where I learned how a big organization functions, how work gets done in an industry and how a team is managed. I a learned a lot of new technical things and the application of theoretical knowledge gained in the institute in the real practical scenario. The general overview of the company was quite enriching and we learned about many different machines and tests.

Learning outcome : 1.Technical knowledge and experience: We got to learn many technical concepts about the helicopter, swash plate mechanism, upper control system. Hydraulic systems, strain gauges, quality aspects, fracture mechanics, FMEA, reliability aspects etc.
2.Communication skills: It was the first time that we got the experience of communicating daily with our mentor, employees and staff of an industry on a daily basis. Daily communication enhanced our professional communication skills. By observing the style, way and body language of employees we gained a lot of insights as to how one must be confident and enthusiastic while speaking.
3.Team Work: We learned that the quality of working in a team is very important while working on the project. One needs to respect all the team members and their opinions leaving personal prejudices. One needs to focus on each other's positive aspects rather than pointing out the mistakes every time. Hence it was a great learning experience in working as a team.
4.New tools and softwares: Further we got an opportunity to understand and work with the tools which had not used earlier like Minitab for the quality control aspects and Ansys for force analysis.

PS-I is an exposure oriented course : Yes PS-1 is an exposure oriented course than a project oriented course. One gets to know for the first time how work gets done in an industry. One gets to learn what is the plant layout and why that particular layout has been chosen.

PS-I station: Henkel Loctite , Mumbai

Student

Name: Aditya Majali (2017B5A41031G)

Student Write-up

Short Summary of work done : My project involves a detailed study of the production and packaging carried out in the Solvent Based Adhesive Plant. The objective is to observe the work flow in the Solvent Based Adhesive plant and suggest any changes which might help in improving the efficiency of the same. This includes the surveying of storage facility in the plant and coming up with possible changes to reduce time of transportation and man power. I suggested changes in the machinery used(pumps) to increase production and also came up with a rough estimate and cost-payback analysis for building a new warehouse.

PS-I experience: My PS-1 experience was great. I incorporated presentation skills and studied pumps and systems in detail. The PS station was also very supportive and they liked the ideas that I had presented. PS-1 could have been even better if I would have been allotted a more relevant project or station corresponding to my degree

Learning outcome : I learnt a lot about pumps and systems which would help me when I study mechanical engineering in detail. Apart from that, I also came to know about a lot of technical details about storage in warehouses, the safety factors involved. One of the best learning experience was that my presentation and communication skills improved.

PS-I is an exposure oriented course : I agree with this statement. PS-1 gives exposure into the corporate world, factory floor, etc.

Name: Krutarth Kamath (2017A1PS1042H)

Student Write-up

Short Summary of work done : My project area was focused to the hot melt adhesive plant's Belt processing unit in Henkel and my work was to deal with the underproduction faced and to come up with some feasible solutions which could scale up the production. So, in order to achieve so the cooling systems were needed to be improved so that the rundown time can be reduced thus leading to increase in the production.
The possible improvements suggested by me included mineral fiber insulation to the chiller's inlet pipeline, Cold air passage in the air knives and up-gradation of single slit mist spray nozzles to multi mist spray nozzles. Also, to reduce the time of production I

suggested to make the packaging unit automatised which could save on an average of 34.5 mins. over each batch cycle.

PS-I experience: Honestly, the senior workers in the plant were too friendly and guided us at every step where help required. The work atmosphere was also very good, busy, engaging and also relaxing. I got an idea of how the chemical processes are dealt on large scale and how managing the same is difficult at the same time.

Learning outcome : I learned how the principles of heat transfer, fluid transfer apply in real life and how difficult it is to control the parameters which governs the manufacturing. Observing it on the large scale definitely provided me with bigger and better picture of what problems chemical plants face in real life and how important is it for the plant to constantly upgrade to meet the increasing peoples demand.

PS-I is an exposure oriented course : Being just completed 2nd year with the incomplete knowledge of what we are actually dealing with, we were not really expected to get on the manufacturing (shop) floor and handle the problems by our own but were expected to learn by constant and keen obser

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PS-I station: Hindalco Industries Limited , Renukoot

Student

Name: Shubham kavia (2017B3A80564G)

Student Write-up

Short Summary of work done : The IT division at Hindalco deals with ERP hosting and maintenance. The
development team of the IT division is responsible for developing custom applications for the Hindalco Plant, employees and the residents of the township. The development of the custom application takes place on the Oracle Java framework using different frontend and backend languages. The use of Java, SQL, and PL/SQL are limited to backend development whereas the HTML, CSS, and Javascript are used for the front-end development. The developed application is then

hosted on the required platforms. The app helps with the feasible booking of transportation services within campus. This is advantageous in reducing time delay using better management of information. Keeping in mind the basic Hindalco's approval system we developed the front-end of the application, which is used by the IT team to integrate with the back-end of the application(developed using Oracle Java Framework), thus completing the working application.

PS-I experience: It was ok.

Learning outcome : An aluminum plant working for more than 50 years needs constant up-gradation of
technology to maintain the proper working so that it can compete with the growing competition across the globe. The IT department of Hindalco, Renukoot works diligently to develop and upkeep the network infrastructure within the plant. It also develops custom applications for the Hindalco Plant, its employees and the residents of the township. Development of these applications requires knowledge of several software like Sublime text, Android studio, etc and computer languages like Java, JavaScript, HTML, etc. We undertook a project to develop an application to optimise transportation vehicle management. Firstly we invested time and learned the required skills to develop applications. We then assisted the IT and the Services Department in developing front-end of this application. This application would facilitate better communication between departments requiring transportation facility. This would help to optimise the approval process by reducing time delay. We have provided an interface which is user-friendly.

PS-I is an exposure oriented course : It was ok.

PS-I station: Hindalco Industries Limited , Renusagar

Student

Name: Sarthak Mohanty (2017A3PS0520H)

Student Write-up

Short Summary of work done : Theoretical and practical study of Boiler Management System including various Instrumentation devices, Distributed Control Systems and Power Distribution and then preparing a easily-understandable Study Manual for the beginners (new employees) at the Renusagar Power Plant.

PS-I experience: Working in an esteemed organisation such as Hindalco gave me exposure, taught me time management and improved my communicating skills. It also gave me technical and practical knowledge which for sure will help me later on.

Learning outcome : Learned about Boiler Management System and Distributed Control System in great detail and the practical knowledge I recieved is going to help me a lot in the future.

PS-I is an exposure oriented course : Yes, it is indeed an "Exposure Oriented Course".

Name: Animesh Srivastava (2017A4PS0523H)

Student Write-up

Short Summary of work done : Our project was an IT work to make a website for the IT Department. We had to create a system by which the process of taking items through the gate becomes automated. So, we made a web portal, implemented login and signup features, added an option to add new items for processing, and upon completion, the website would generate a digital form with all the relevant information regarding the item, along with a barcode at the end of it. This was done so as to digitize the data entry at the gate, and a simple scan of the barcode would log the item going out.

PS-I experience: It was a really informative and teaching experience. Not only did I learn about the project and the related field, I also learned about the company, the power plant, how it functions, and got a glimpse of the office life. Having met people employed here in an formal environment really changed a lot of my preconceived notions about the work life.

Learning outcome : I learned to use various languages and libraries. Along with that, I learned the other, non technical part of the IT department.

PS-I is an exposure oriented course : I agree with it. It is indeed based on exposure and does a very good job at it. This whole period of almost two months gave an idea

about how life after college would be, and I think it is very important for students to know about that.

PS-I station: Hirmi Cement Works , Simga

Student

Name: Ashul Gupta (2017A3PS0468H)

Student Write-up

Short Summary of work done : I was assigned to a project of ESP Emission Losses at Hirmi Cement Works. I had to pursue my project under guidance of Mr Tarun Nigam, my mentor.
The project work part of the report deals with the ESP, its design, its specifications, etc. The aim of the project is to help minimize dust reduction and reduce air pollution. ESP is one of the most important components of any industry and not just limited to cement manufacturing ones. Since air pollution is on the rise, venting out the smoke filled with harmful particles is dangerous to humans and mankind, even if the industry is in a remote location like Hirmi. So my project was to have a detailed study as to How an ESP works, what is its design, where it is used, the specifications of the one particularly used at Hirmi Cement Works, etc. At the end, I have to suggest some measures which may improve the efficiency of the ESP.
The methodology followed included these steps: -

- To learn about ESP and its working
- To understand the importance of an ESP
- To learn the specifications of the ESP present at Hirmi Cement Works
- To study the monitoring process of an ESP

PS-I experience: My PS-I experience was really good. It was an incredible opportunity to learn about the professional life alongside the development in my knowledge that I had by staying here. I consider myself fortunate to visit this plant and meet the employees who are experts in their field and learn from them despite them having a busy schedule. The HR team here along with PS coordinator made all their effort to make my stay at HCW comfortable. My mentor was very helpful and willing to guide me at every place

wherever I get stuck, giving fundamental pieces of advice and direction and arranged all the facilities to help me cross all the possible hurdles. The faculty of HCW were always willing to spare some time and help me. A cricket match was played every Sunday morning among PS students and faculty of HCW which was very fun and helped in bonding together and equipment for every type of sports was available making our stay very joyful.

Learning outcome : This PS helped to learn about how a cement industry operate and how cement is manufactured at every stage and how it is packed. I learnt about ESP, its working principle and why it is important and how it is monitored. I also learnt about the way of professional life alongside the development in my knowledge that I had by staying here.

PS-I is an exposure oriented course : True. The PS helped me to live a professional life and gave me the taste of the outside world, i.e., gave me exposure. It taught me innovate and how to fulfill requirement of project under constrained conditions with limited resources.

Name: Mikesh Anand (2017B3A40721P)

Student Write-up

Short Summary of work done : I was assigned to a project of power minimization in use of air compressors in packing plant at Hirmi Cement Works. I was pursuing my project under guidance of Mr. Bharat Bhushan Verma, my mentor.
Equipment at packing plant used compressed air for its operation. Two types of compressed air is used in packing plant, low pressure and high pressure. Equipment such as fly ash bowser and silo- used for storing cement uses low pressure air which is at 2.5 Kg/cm2 and equipment such as hopper- used in packing and JPF- and industrial air filter works using high pressure air which is at 6 Kg/cm2. I focused in low pressure air usage as high pressure air delivery system was already optimized according to current needs.
Possible reasons for extra consumption of power identified were due to leakage at certain points, quantity of air being supplied is not dry and clean and air compressors being used are of more power than required.
A compressor of 250KW delivering capacity of 1788CFM is used here for silo extraction. After calculating required CFM, conclusion came out that a compressor delivering 500CFM is efficient. So a compressor of 55KW I got with the help of my mentor. If this compressor is used instead of 250KW, there will be an annual saving of around Rs. 65 Lacs. For leakage, I suggested ultrasonic leakage detector and painting compressor lines with oil paints.

PS-I experience: My PS-I experience was really good. The HR team here along with PS coordinator made all their effort to make my stay at HCW comfortable. My mentor was very helpful and willing to guide me at every place where I get stuck. The faculty of HCW were always willing to spare some time and help me. A cricket was played every Sunday among PS students and faculty of HCW which was very fun and helped in bonding together and equipment for every type of sports was available making our stay very joyful.

Learning outcome : This PS helped to learn about how a cement industry operate and how cement is manufactured at every stage and how it is packed. I learnt about air compressors, it's working principle and where and how compressed air is used in some of the equipment and how to optimize its use and reasons for loss of energy.

PS-I is an exposure oriented course : This PS helped to apply every knowledge learned in classrooms at an industrial level and apply theoretical knowledge practically. It taught me innovate and how to fulfill requirement of project under constrained conditions with limited resources. It also

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PS-I station: Honda Motorcycle & Scooter India Pvt. Ltd. , Manesar

Student

Name: Pranav Mehta (2017B2A40437G)

Student Write-up

Short Summary of work done : I was allotted various types of work by my mentor Mr. Nishish. The work consisted of filling check sheets related to the incoming raw materials, daily production and product rejection rate. I was to submit a weekly report to my mentor on Saturday in which I was supposed to highlight the work done by me during the past week.
On 13th of June there was a shortage of line workers in the plant. So I got a great opportunity to work on the line for about 2 hours.
I was also given work such as to make presentations and excel sheets for the department on daily basis.

PS-I experience: It was a great learning experience for me. It was also a new experience for me since this was the first time I got to work as an intern in an automobile plant. I would like to thank the PS 1 division for providing me with this once in a lifetime opportunity.

Learning outcome : 1. Got to learn and see the functioning of a huge organisation such as that of HMSI.
2. During my training I got to learn 2 new softwares. SAP and Minitab.
3. I got to learn how Genba and 5S audits are conducted.
4. Was fortunate enough to work on the assembly line.
5. Lastly with the presentations and report submissions I got the opportunity to enhance my oratory and MS Word skills.

PS-I is an exposure oriented course : I greatly concur with the above statement. Due to PS-1 I was exposed to a organisation as huge as HMSI. It is more of exposure oriented training compared to technical oriented because we as students have just completed our 2 year and don't have much knowl

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Name: noah george (2017B4A40845P)

Student Write-up

Short Summary of work done : My project at hmsi manesar was "warranty reduction of front fork". In that project i was able to study data on warranty claims given to hmsi and study the different trends. I was able to analyse the root cause of the defects and come up with countermeasures to decrease the number of warranty claims

PS-I experience: At my ps-1 I was able to gain exposure to the working of a manufacturing plant. I also got to work with a knowledgeable mentor who guided me through my project.

Learning outcome : I learned
1. Processes involved in manufacturing a motorbike
2. warranty analysis
3. inspection of parts

PS-I is an exposure oriented course : I find this statement to be true. I did not have any prior experience of working in a manufacturing plant but through my ps-1 i was able to gain exposure to the manufacturing industry

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PS-I station: Honda Motorcycle & Scooter India Pvt. Ltd. , Narsapura (Karnataka)

Student

Name: Anirudh Ramesh (2017B3A40533G)

Student Write-up

Short Summary of work done : My work in the company was regarding problems that the company faces regarding Ignition key sets. I was assigned this project to find different possible solutions or counter-measures that can be taken to avoid these defects. I 1st started off by understanding the working mechanism of key sets which in itself was very enlightening. Then I analyzed the defect trend from the suppliers to check which types of defects were occurring more frequently and graded these defects according to their severity. I started finding out the different possible ways and methods that can help reduce these defects and also found out the pros and cons of their implementation. The senior executives from various departments were very understanding and helped me whenever I faced any problems. Finally I compiled the different counter-measures that would potentially solve these problems and showed it to the executives in the company.

PS-I experience: My experience with PS-1 was very enlightening and interesting. I got a brief idea of how an automobile industry works and also learnt how to strike a balance between work-life and my leisure time which would prove quite useful in future.

Learning outcome : I got a basic understanding of how an automotive industry works and also learnt the different methodologies and approaches that the company takes to solve different types of problems.

PS-I is an exposure oriented course : This statement is absolutely true and after my experience at my PS-1 station, I now know how an automotive industry actually works. It also helps me make an informed decision for future internships and placements.

PS-I station: Indian Oil Corporation Limited , Mumbai

Student

Name: TULIKA GANGULY (2017B5A70606P)

Student Write-up

Short Summary of work done : My project spans the uses of ECMS software products with focus on Workflows, Document management and Files and notes sheets. The report spans a case study of software called OnBase to justify capture, manage, access, store and protection functions of documents within the organisation, and then the report spans a study of how Indian oil utilises Unnayan Portal to manage its work flow. WorkFlow management utilises IBPS Newgen product, Documentation required OmniDocs, and File and Notesheets demand Egov components of Newgen. Together these components comprise of the daily Employee work environment at Indian Oil office.
The report then spans the use of a more dynamic Software called SAP, which is an ERP solution to manage material, supply and distribution, Projects, HR and finances at Indian Oil. Unlike ECMS, SAP is a more detailed software constituting and conglomerating all primary customer details within its outreach. To remove discrepancies in supply and finances and allow functioning real time, SAP had been accepted as a fundamental software in the company since '96.

PS-I experience: The experience was pretty engaging, my mentor was extremely supportive and gave me in depth idea about the usage of the software at Indian Oil, as well as the challenges that they faced in daily life, that is, the changes or configurations that still need to be employed to get better work-life. The working environment at Indian Oil was also very interactive and employee friendly.

Learning outcome : I learnt the uses of softwares like ECM (Workflow, documentation, databases, application and validation), SAP (Enterprise Resource Planning, T codes for validation) and Intro to Siebel CRM. These softwares give an actual exposure to work and document transfers and sanctions along departments

PS-I is an exposure oriented course : Yes, surely, because we get exposure to actual work related queues and queries, as well as on field issues

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Name: Vishwesh Mudaliar (2017A4PS0286H)

Student Write-up

Short Summary of work done : Pipeline is the most cost effective, energy efficient, safe and environment friendly
mode of transportation of petroleum products. They ease the overburdened Rail & Road infrastructure and minimize the environmental impacts arising out of Rail & Road transportation.Pipelines play a significant role in meeting the demand of petroleum products
in India.In this project,we studied about how the crude oil is transported via pipelines,an overview of MILP model used for scheduling of pipelines, safety measures used for keeping the pipelines in working condition, maintenance of pipelines, and suggestions for reducing oil transportation cost by preferring pipelines over other means of transport.

PS-I experience: Our project required a lot of data analysis. We collected raw data from Google and discussed it with our mentor on daily basis. We would report to him twice a day, where he sat down with us and guided us about the project. We made two field visits, one to Vashi terminal, and another to Mahul refinery, both of which gave us further insight about how the industry works.

Learning outcome : Came to know about how the Oil industry works, particularly crude oil transportation via pipelines and also the fact that pipelines are the most efficient and economical way for oil transportation.

PS-I is an exposure oriented course : Exposure was good. We got to see how the PSUs function. There were two field trips also. So overall, the experience was good.

PS-I station: Indian Oil Corporation Limited , New delhi

Student

Name: Chetan Chauhan (2017A3PS0514H)

Student Write-up

Short Summary of work done : My PS-1 project title is: Pipeline To Soil Potential(PSP) Survey and High Tension(HT) Motors.
Pipelines are the most common modes of transporting oil and gas. A pipeline is just like any other flow line. Pipeline infrastructure is critical element of energy distribution systems. But corrosion poses a great threat to them resulting in leaks, bursts, fatal accidents etc. causing loss of wealth and lives.
PSP Surveys are carried out to monitor the corrosion health of the pipelines and location of 'hot spots'. Assuming that the buried pipeline is protected using Impressed Current Cathodic Protection (ICCP), then any defects in the coating will result in electric current flowing from the surrounding soil and into the pipe. These currents cause voltage gradients to be set up in the soil, which can be measured using a voltmeter. By looking at the direction of these gradients, the location of coating faults may be identified. By measuring the localised soil potentials with respect to remote earth, a measure of the effectiveness of the cathodic protection may be calculated. PSP measurement is carried out with the help of a suitable voltmeter in which negative terminal is connected to pipeline(cathode) and positive terminal to the Cu-CuSO4 standard electrode(anode).
The second part of the project deals with the knowledge about the various electrical equipments used at IOCL manily HT Motors , its construction , principle and maintenance required. SCADA and its use are also summarised. Report is made based on my observations and analysis of instruments there.

PS-I experience: Work Culture is simply amazing, with opportunity to learn significant things enhanced due to hands-on experience. Team members are always helpful and are always keen in encouraging doubts and guiding. I was always mentored about how to do things and was always given significant work that would add value to the company.

Learning outcome : Survey Research, Process and Instrumentation Diagrams(P&ID), SCADA basics and Working of HT Motors and Maintenance .

PS-I is an exposure oriented course : Yes, PS-1 is an exposure oriented course.
During this time period, i got a lot of exposure of the IOCL organisation , On-field instruments, operations and maintenance , PSP surveying etc. which are an integral part for the industry. Such courses encourag

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Name: Deepanshu Sharma (2017A1PS0674P)

Student Write-up

Short Summary of work done : My work was to understand different refinery units involved in Petroleum Refinery and also worked on efficiency of fractionation unit through Simulation.

PS-I experience: I have learned a lot of new concepts in refineries and also got to know about Simulation. I have got a overview of refinery units.

Learning outcome : Learned about different petroleum refinery units and worked on efficiency of fractionation unit used in refinery. I have got to know about different parameters which are significant in the efficiency of fractionation unit.

PS-I is an exposure oriented course : Yes, PS 1 is mainly for exposure. We get some project and then, we work on it with the help of different employees in the organization which gives a lot of learning and exposure.

PS-I station: Indian Oil Corporation Ltd., , Vadodara

Student

Name: Pratik Mishra (2017A2PS0926P)

Student Write-up

Short Summary of work done : We had to check drain system of the facility and gauge adequacy of the system i.e whether the drains will overflow during monsoon or not. This is critical because overflowing water can cause damage to equipments and machinery

PS-I experience: We surveyed around 46 drains allocating each drain to a particular block. The tedious part was surveying the entire IOCL plant which is about 370 hectares. We were not allowed inside the units so had to interpret visible information with maps and understand flow direction and main drains for each block. The best part of the job was a really supportive mentor who helped us in getting maps, knowing the facility and took us for site visits. Without his help this momentous task would not have been possible.

Learning outcome : It gave us a greater insight into flow velocities, capacities, adequacy of pipe and drain networks. It helped me boost interpersonal skills and improved my presentation and delivery skills.

PS-I is an exposure oriented course : Yes , PS-1 helped me understand hierarchy and the functioning of the organisation.

Name: Jyotiraditya Singh (2017A4PS0447P)

Student Write-up

Short Summary of work done : Acquiring technical training at IOCL is a wonderful opportunity of industrial exposure and gaining technical knowledge & skills by analysing the real time industrial processes and well integrating theoretical concepts learnt at the institution, with practical implementation at fully-fledged industries like IOCL.
Immense learning is feasible, especially for Mechanical & Chemical discipline candidates and even for others.
I, teamed with another peer from Pilani Campus had been allocated the Mechanical Maintenance tasks of visiting all the industrial process, production & refining units and divisions according to a weekly schedule. We were required to meet the corresponding engineering, personnels, appreciates & workers to gain as much knowledge about the respective units. We accompanied them to the sites!
We tried to figure out...
How does the unit contribute to the refining? What are employees' tasks? What are the equipments & machinery installed with their technical specifications? How is the equipment maintained in normal working conditions & how is condition monitoring carried

out? How do they troubleshoot equipments failures? How is the work culture & environment? and many more.
We gained a lot of knowledge & exposure about equipments like pumps, compressors, valves, turbines, boilers, condensors, heat exchangers, advanced fire extinguishing systems etc.
We also did 2 interesting & industry-contributing projects 'Condition Monitoring of Rotary Equipments by Vibration Analysis' & 'Overhauling procedure of Centrifugal Pump' under highy experienced & supportative mentors from Rotary Planning & Mech. Maintenance Dept.

PS-I experience: Overall, it was a GREAT industrial exposure, synchronized with relevant evaluation components like Quizzes, GDs, Presentations & Reports.

Learning outcome : Real-Time Industrial Exposure and Acquiring of Technical Knowledge & Skills.

PS-I is an exposure oriented course : Sure Yes!
I feel if a trainee is genuinely motivated, he/she can learn, contribute & gain tremendous!!!

Name: Pathik Gandhi (2017B3A30680G)

Student Write-up

Short Summary of work done : I took a project titled "Implementation of GST at IOCL" in the finance department of IOCL. For the first 15-20 days I had to read about the basic concepts of GST and the changes brought about in the Indian taxation system by the introduction of GST. Then, I was given the task of verifying the invoice bills to check whether GST was charged at a correct rate or not. I also had to find out the missing invoices and file them at the correct location. I was also shown the process of filing returns in IOCL. I also learnt about basic concepts of finance like cash management, inventory management,etc.

PS-I experience: Overall, it was a good experience as I got to know how the finance department of such a huge company like IOCL works (it has an annual turnover of about 6,00,000 crores). I also met new people and learnt a lot about practical aspects of finance- which is a lot different from what is taught in theory.

Learning outcome : Basic concepts of GST
Tax structure and rates applicable to different products

Filing returns under GST
Cash management, inventory management and credit rating

PS-I is an exposure oriented course : I agree with this statement. More than technical skills, it enhances our understanding about the industry and gives us an exposure to the industry. However, in order to learn different things, you have to take the initiative and keep asking your mentor.

Name: Yash Chauhan (2017A2PS1535H)

Student Write-up

Short Summary of work done : Determining the adequacy of storm water drainage systems and propose methods to increase adequacy if required

PS-I experience: Overall it was a wonderful experience working in IOCL, Gujarat refinery. First of all the project alloted to us was very engaging, interesting and one of its kind. Our mentor was incredibly friendly, supportive and a funny character but serious about work. He provided us with an in-depth knowledge about the functioning of units in his alloted zone quite frequently and also gave us valuable inputs on our project.

Learning outcome : We observed the flow patterns of drainage systems within the refinery, their construction and maintenance also the maintenance of operatimg units during shutdown and we also saw many operating units and storage tanks.

PS-I is an exposure oriented course : PS-1 provides a great opportunity to gain practical work exposure and indulge in various departments of an organization, get to know its functioning, help us provide inputs and gain valuable feedback. In short it prepares us for working in an organization.

PS-I station: Indian Railways Organization for Alternate Fuels (IROAF) , Delhi

Student

Name: Himanshu Goyal (2017A1PS0814P)

Student Write-up

Short Summary of work done : Students at the station were divided into groups of 3 or 4 people. My group was allotted two projects-
1.) The first project required us to search for innovative ideas for solar panels installation and try to apply it on the railway rolling stock. We conducted site-visits of the railway workshop for feasibility calculations and looked for previous studies and reports for reference and citations.
We first studied the basic working of solar panels based on p-n junction model and then looked at some researches to provide latest method and innovation in the solar energy field. We suggested the Railways to research more on the field of STPV (Solar Thermal Photo Voltaic) cells, which is a research innovation of MIT scientists.
2.) The other project involved the survey of waste generation on railway premises and to determine a feasible "waste to energy" model via the employment of a stable supply chain mechanism.
Here, we conducted a door-to-door survey in the Kishan Ganj railway colony, Delhi and asked the residents about the issues they are facing on waste disposal. We also made posters to aware them of the proper disposal methods. Then we estimated the amount of waste (dry and wet) that could have been produced in the colony if there was proper segregation and further this could have been used in the bio-gas plants.

PS-I experience: The PS-1 station was a government office, thus I experienced the dynamics of a government office. I came to know about the work load of the officials and how they complete their targets.
The projects which I did were based on conservation of environment and use of non-conventional energy, thus to learn about these topics was an added advantage.

Learning outcome : 1.) As the projects were provided in groups, I developed leadership skills as at various stages I led the group to make sure the project was completed in time.
2.) I learnt about corporate job structure and need to follow strict schedules.
3.) I learnt about solar energy and bio-gas production techniques.
4.) I came to know about the method of making a report.
5.) I learnt about the procedure to conduct surveys.

PS-I is an exposure oriented course : YES, I agree with the above statement. PS-1 gives a student a lot of exposure of the corporate life and gives you many learnings. As my PS station was a government office, the exposure was more enhanced and rich.

Name: Utkarsh Dixit (2017B1A10403P)

Student Write-up

Short Summary of work done : We had 2 research projects allotted to my group:
1. To increase the efficiency of the existing solar panels and use them to economically run appliances on the railway rolling stock. We then worked on Solar Thermophotovoltaic cells (STPVs) and graphene modifications to increase the theoretical efficiency.
2. To determine the problems regarding waste management and its adequate disposal in Kishanganj colony, the largest railways colony in Asia. We conducted a survey to determine the data points and made certain predictions. This data was then used to access the feasibility of the bio-diesel plant located nearby which uses organic waste as its substrate.

PS-I experience: Our internship also included site visits to workshops and conducting surveys which were really a great learning curve.
The officials were very polite and cooperative which made the work environment healthier.

Learning outcome : 1. Technical know how of the solar panels, waste management, bio-diesel and basics of supply chain management.
2. Work culture and hierarchy in the government offices.
3. Actual assembly processes done in factories.
4. Data collection and making predictions.

PS-I is an exposure oriented course : I agree with the above statement that here we get to learn of how things actually work in the real world. It also gives one the required confidence to pursue his/her interest as per the work done at the station.

PS-I station: Integral Coach Factory , Chennai

Student

Name: VIREN K RAMCHANDANI (2017A3PS1000H)

Student Write-up

Short Summary of work done : I did a study report on Electrical Power Systems in Coaches manufactured at ICF. To manage such a power system, a schematic should be designed and all the system will work in accordance with that. This report presents such schematics in detail with necessary specifications and ratings and provides an in-depth explanation of various devices used to get this Power System into functioning. This report also describes various performance testing methods with relevant parameters and provides few improvements for the same.

PS-I experience: This experience is an unforgettable one for me as I got to be at a place which I had been dreaming about since childhood. i was completely mesmerized by their scale of production and their produce. The staff and employees at ICF are very positive and friendly. They are always welcoming people to learn and grow.

Learning outcome : At ICF, I learnt that what we see as mere train coaches while travelling, have a story of long work hour and experiences of thousands of engineers, workers and staff went into manufacturing these coaches. Concepts of Power Electronics are indispensable while manufacturing Electrical Systems for a train. Mechanical and Electrical Designs form an integrated part of the system.

PS-I is an exposure oriented course : This statement is very much true in my opinion as I got to learn a lot about the industry culture and professional work environment modalities at ICF in addition to seeing real world application of concepts learnt in theory.

Name: Laawanya Kishor (2017A8PS0580G)

Student Write-up

Short Summary of work done : Observing and preparing the study report on Furnishing of DEMU coaches in factory. Collaborating with IT department to make a login portal for the company's use.

PS-I experience: It was great , vivid and fulfilling. It was a great work exposure of working i n big corporate company.

Learning outcome : Got a exposure to work culture of a company, learnt about the manufacturing and furnishing process of DEMU coaches, got a exposure toward web development.

PS-I is an exposure oriented course : Yes, for me it is the exposure to work culture and corporate environment which I experienced in PS 1, the most important outcome of PS 1.

Name: Reetik Ranjan (2017A4PS0602P)

Student Write-up

Short Summary of work done : The manufacturing work at the Integral Coach Factory is mainly done at two places, the Shell Division and the Furnishing Division. During the first five weeks of our PS we visited 5 different Shop floors in the Shell Division namely Roof and Underframe Assembly, Body Shell Assembly, Bogie Assembly, Wheel Assembly and Spring Shop; each one of them for a week. There our task was to understand all the manufacturing processes taking place and make suggestions, if any to the Senior Section Engineers of the respective shop floor. During this duration we also performed a life cycle analysis of the sidewall of a two tier AC LHB Coach. In the second part we visited Furnishing division where we were exposed to the finally assembly of a railway coach and the working of different types of braking system in Indian Railways.

PS-I experience: Integral Coach Factory, Chennai is an organization on Indian Railway which has been producing railway coaches for India since 1954. In the year 2018 ICF produced 3600 coaches. It was my first exposure to an organization of such a magnitude. At Practice School- 1, I learned not only about the technical specifications of manufacturing but also to the various aspects of work ethics, punctuality and challenges of managing a extremely large workforce.

Learning outcome : At ICF one could observe things related to each one of the mechanical engineering CDCs taught until second year. I learned to understand the engineering drawing used to manufacture railway coaches, process and reasons behind material selection, various aspects of around 5- 6 types of welding including robotic spot welding and CNC welding. I also learned about assembly lines and challenges of managing a large workforce.

PS-I is an exposure oriented course : Indeed, I would say that PS- 1 was the practical of all the courses we studied in our first two years of college. It gave us a real life exposure to all the mechanical engineering courses I have studied in my 2nd year.

Name: K. Siddharth (2017A4PS0666H)

Student Write-up

Short Summary of work done : The manufacturing processes in three different divisions of the Integral Coach Factory, namely the Shell Division, the Furnishing Division and the LHB Division, were observed. In the Shell Division, the Roof and Underframe shop, the Main Assembly shop, the Bogie Assembly shop, the Wheel shop, the Spring shop were visited, and the main processes, the designs, materials used, workforce, equipments used, etc. In addition, we learnt the types of welding, use of dampers, wheel balancing, press fitting, shrink fitting, shot peening, etc. In the Furnishing Division, the Main Assembly shop, the Brake testing shop were visited, and the processes and principles for observed. The stages of Main Assembly, namely Preparatory, Flooring, Wiring, Panelling, PVC pasting, Moulding, Fitting, Pitline and inspection were observed, and the efficiency inspected. Working of Autobrakes, Electro Pneumatic Brakes, Handbrakes, Parking brakes were learnt. In the LHB Division, how all the processes happening in the Shell Division have been modified for LHB coaches was noted.

PS-I experience: This was the first time I had visited such an industrial production unit and observed every single process that is being carried out first hand. I could also correlate a lot of what I had learnt in my second year at BITS Pilani to what is being carried out in ICF. But, at the same time, I also understood how different the actual processes are from the textbook, because of inability to achieve perfection, and other factors. This was again another opportunity to work as a team with new friends, and make the best out of our time together.

Learning outcome : We were able to correlate a lot of the concepts we learnt in college to the processes carried out here. We came to know all that happens behind the manufacturing of a coach, and how complicated it is. We learnt how each process is carried out, why so, how much workforce is required, how the health and safety conditions are, etc.

PS-I is an exposure oriented course : This statement is indeed true. This was our first exposure to the industry, to a manufacturing unit. All we did was observe and gain exposure of the processes, the managerial aspects, the structural layout, etc.

Name: Vaibhav Srivastav (2017B5A40974P)

Student Write-up

Short Summary of work done : ICF is the largest coach factory of Indian Railways it produces coaches for all the trains running in India and also contract based manufacturing for neighboring countries like Sri Lanka. The famous high speed train launched in 2018 Vande BHARAT etc. So the work is mostly about observing the process in various shops of the factory shops like main assembly,roof shop, bogie assembly,spring shop, and Furnishing division with electrical fitting, emu shop, electric power car shop, LHB shop.In these all shops a students have to roam around in a shop for a week or two and has to observe each and every procedure and ask the shop senior section engineer for guidance and doubts.

PS-I experience: For mechanical students Integral Coach Factory is a huge platform to gain practical knowledge of the mechanical subjects.one can find almost all mechanical processing machines that are used all over India and also latest technology imported machines from various countries. observation based learning is far better than theoretical learning especially for mechanical. For guidance you can contact any one working there, everyone are ready to help you with the doubts.

Learning outcome : how a train coaches of different types are manufactured what are the specifications of a type of coach, after visiting ICF one will definitely point out how it is made, what type of coach is it whenever he/she travels in Indian railways train.

PS-I is an exposure oriented course : Exposure in the sense you get a feel of office hours, punctuality, one learns to accommodate in that environment plus ICF is a factory so a student is directly exposed to field work job.

Name: Nayini Venkat Aashray (2017A4PS0187P)

Student Write-up

Short Summary of work done : A Gate-to-Gate Life Cycle Assessment study was conducted for a LHB 2nd AC II-tier coach's sidewall to analyse the Carbon Dioxide emissions due to manufacturing processes happening inside the factory's premises. The study was conducted according to ISO 14040 standards. The objective of the study was to understand the methods and difficulties that arises in a Life Cycle type study and their scope as tool to understand environmental impact. Emission contribution due to different process categories was compared.
The functional unit was one-unit sidewall of a LHB type coach. The system boundary was as per a Gate-to-Gate study where only the impact of processes happening inside the factory were considered. The impact was measured in terms of kilograms of Carbon Dioxide being emitted to produce one unit of sidewall. Suitable factors were used to convert energy consumption to CO2 emissions. Data collection is the most challenging part of a life cycle study. A comparison of theoretical against practical consumption of power could not be made since both of the two data sets were unavailable for some processes. The data set used was acquired from power meters, machines' ratings and inventory data using some assumptions. Quantitative results cannot be disclosed due to confidentiality reasons. The results obtained indicated that compressed and liquefied gases are one of the biggest contributors to emissions, even more than direct power consumption of large automated machines. The study helped in understanding the difficulties in conducting a reliable Life Cycle Study majorly due to lack of reliable data. Industries sometimes choose not to monitor processes at a micro level due to economic reasons, which makes it difficult to have reliable data to conduct studies of this kind.

PS-I experience: Practise school-1 helped know what are the actual demands of the job. Gaining exposure through PS-1, we will now be able to focus on specific parts which will help me in my job. Though weather was a bit harsh in Chennai, we enjoyed the program throughout.

Learning outcome : The practice school program at ICF was a unique learning experience. The practical insights on how a real industry is organized and functions are hard to get through classroom teaching and learning methods. Economics is as finely integrated with production as engineering. A major concern of a production activity is its economic and organizational feasibility. The study of factory layout provided important insights on how optimization of daily operations contribute to optimization of overall production and helped in testing the principles of layout design. Adopting an Environmental policy and taking practical measures to reduce environmental impact highlights the potential, industries hold in terms of promoting global sustainability, while feasibility still remains a challenge.
The Life Cycle Assessment provided a first-hand experience to Life Cycle studies as a tool to understand environmental impact, their feasibility and limitations.

PS-I is an exposure oriented course : Absolutely, this program helped gain exposure towards actual job. I feel this is crucial for everyone's study before they take up their work.

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Name: Harmeet Singh (2017A3PS0333P)

Student Write-up

Short Summary of work done : At Integral Coach Factory, the work for the whole duration of PS-1 was divided into visiting various departments ans shops of the factory and learn about their working. First week was in the planning department where we learned about the use of SAP software inside the factory and how they plan their requirements for various coaches. Next Two weeks were in Design and Development Centre, where we were studied various electrical schematics of components used in AC and Non-AC coaches. Then we visited particular shops like Diesel Electric Multiple Unit and LHB(The latest technology used by ICF)

PS-I experience: PS-1 was a first hands-on experience on how an industry works. This experience would definitely be beneficial when the students start their real time jobs. All the officers inside the factory were always ready to help us in understanding the working of a particular machinery.

Learning outcome : I was able to apply the already learnt concepts in electrical engineering learn in 2nd year in BITS Pilani. Also,I was able to learn some topics like PHP and MYSQL and some brief about the upcoming topics in Electronics like power electronics.

PS-I is an exposure oriented course : PS-1 is definitely an exposure oriented course because you get to experience an industry and learns it's working for the first time.

Name: BHUPATHIRAJU MANIDEEPU VARMA (F2017A4PS0754H)

Student Write-up

Short Summary of work done : The very first day we visited technical training center at ICF and we were divided into groups . And then we went to the shell division and visited roof and Underframe shop where the roof and Underframe are welded, and then we visited main assembly shop where roof and Underframe are fitted to each other. And then we visited boghie assembly where the other parts are placed and welded and most of that consists of welding. And then we moved to wheel shop , where the wheels are tested and smoothed to easy access of train and the lated fitted in the boghie assembly. Then after this we went to spring shop where the springs ar ea he prepared and deep study on the process has been done and then later these were fitted to the train in boghie assembly. Later we moved to furnishing division and there we visited break shop and examined different bhogies there and furnishing sector where the seats and all the interior works were done . And we visited LHB division and we observed all the works done there and got assigned by good instructors.we saw how the trains were tested and how to overcome few mistakes while assembling and has provided with knowledge of latest equipment used there .

PS-I experience: Our ps 1 experience is really engaging and we learn many things here and were assigned to well knowledged people which helped us learning more accurate and we were really happy for having this as our ps and those faculty members

Learning outcome : 1. Underframe and Main Assembly: The underframe is assembled using CO2 Gas
Metal Arc Welding. After the underframe assembly, the underframe is sent for

Other safety measures :- Buffer at end of underframe, tubular structures at the lavatory regions, corrugated sheets throughout underframe to prevent crushing.
2. Bogie Assembly: The cast steel side frame is brought to guide assembly and brake assembly (wheel guides and brake assembly is separately done for coaches other than LHB). Then, the wheel-axle unit is fixed and the bogie is fixed with spring/air
3. Wheel and Axle Assembly: The semi-indented axle raw material (made of manganese steel or chromium-molybdenum steel) is first sent to Axle Turning Lathe where the axle is Rough Turned to the appropriate dimensions specified
Other test(s):- Ultrasonic Test: Ultrasonic waves are sent through the axle both radially and axially to check for any flaw inside the axle. If any flaw is found the axle will be rejected and if not, the axle will be sent for further processing.
4. Spring Shop: The raw material (peeled steel rod) is heated at both the ends (970^0C - 1050^0C) and tapered. The output (end tapered rod) is sent in full body

1mm diameter hit the surface of Spring with 70N air pressure. Then the spring is sent for scragging (tests the elasticity), phosphating (anti-corrosion), painting and load testing. After this, the spring is color coded and sent to bogie shop.
Other test(s) :- EMCD – ELECTROMAGNETIC CRACK DETECTOR
1. Imported raw material
2. Polished spring (output of shot peening)
5.break shop : In this shop, the preparation of the pipes for the braking system were observed. First the pipes were cut according to the required measurement, then the grinding and deburring processes were done. Then the pipe was bent to the required shape using a hydraulic bend press. Then, the working of an Electro Pneumatic Brake of an EMU and a Distributor Valve brake of a conventional coach were observed and studied. Conventional coaches use air brakes, which consist of 2 lines: feed pipe and brake pipe. Both pipes draw air from compressor which pumps the air to a pressure of 7 kg/cm2. Both the pipes run across the whole length of the train.

PS-I is an exposure oriented course : Yes it is , we were exposed to many new things which helped us in gaining more knowledge and were well equipped with good mechinary

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PS-I station: IOCL Pipelines Head office , Noida

Student

Name: Aishani Chakraborty (2017A4PS0437P)

Student Write-up

Short Summary of work done : For the first week I had to learn about the Oil industry, India's Position in the world and IOCL's contribution and place in the Indian Oil Scenario. I was assigned a project of designing a High Speed Diesel Pipeline from Jaipur to Gurgaon and analyze the most viable and cost effective design for the same. I had to read previous Detailed Feasibility Reports and make a feasibility report for the assigned project. I had to study the general layout drawings, pipeline and instrumentation drawings and various piping drawings and identify the basic differences between them.

PS-I experience: It was a different experience altogether to explore the office culture and see how the courses we learn are actually applied in the real life projects which are taken up by the companies. It was a great exposure to the actual functioning of million dollar industries. All in all it was a good learning experience.

Learning outcome : I have learnt the process of Pipeline Designing and the procedure of making detailed feasibility reports, and analyzing the costs of the company for a given Pipeline project. I have now understood the way general layout drawings and piping drawings are made. Above all I've had a glimpse of how the industry works.

PS-I is an exposure oriented course : Yes PS-1 is definitely an exposure oriented course, and it does give a wider perspective of the industry than regular courses do.

PS-I station: IOCL R & D Centre , Faridabad

Student

Name: Shreya Johri (2017A1PS0878P)

Student Write-up

Short Summary of work done : We distilled the imported crude oil samples and obtained the standard cuts. We then performed around 20 tests on the composite cuts according to ASTM standards. Using the results obtained, we prepared Crude Assay data sheets which were then sent to Research Headquarters, Trading Department and Refineries for making decisions regarding the crude oil samples and processes involved. Apart from this, we also worked on condensate samples and diesel blend samples and prepared data sheets for them.

PS-I experience: I had a great time during my PS. I gained a lot of exposure to the industry and got the chance to observe how all these huge organizations work together. Having my PS in a R&D Centre helped me even more as I could get involved in the ongoing research and also see the work of all the departments of a company at the same time. Any work done in the company originated from the R&D Centre and so I had the glorious opportunity of seeing and understanding all the work done in Indian Oil in detail. Also I learned basic professional ethics and gained a lot of confidence and practical knowledge. It was indeed a memorable experience.

Learning outcome : I learned a lot about how different organizations work together, how the company utilizes the skills of its employees and how each and every person has such an important contribution towards the success of a company. I gained a lot of confidence and practical knowledge. I had the opportunity to explore the Oil and Gas Industry and identify my interests in the field. I also got exposure to the corporate culture and learned basic professional ethics.

PS-I is an exposure oriented course : The statement is totally justified as the exposure we got during PS-1 will play a very important role in the foundation of our future careers. During the two months of PS-1, I could observe the working of the company in detail, understand each person's role in the organization.

PS-I station: Jaipur Development Authority , Jaipur

Student

Name: KARTIKEYA SINGH (2017B3A20776P)

Student Write-up

Short Summary of work done : We visited 3 ROBs/ elevated roads in jhotwara, 22 godam and sitapura. We learnt about the components of bridge including making the bar bending schedule for pile, pile cap and girders. We also visited dravyavati river and a STP located at RICCO, where we learnt about the working of a sewage treatment plant and the main objectives of making the STPs in Jaipur and how these can help the city in making the water uncontaminated and useful for daily uses except for drinking. We also visited Rajasthan International Centre in Jhalana, where we learnt about self compacting concrete and how it is used for the first ever time in the state.

PS-I experience: The organisation helps the students in learning different things about the ongoing construction projects in Jaipur City. The engineers help in everything from basic to the details. Overall it was a great experience.

Learning outcome : We did Sieve analysis test at batching plant of ROB sitapura.

Also we were told about different designs of bridges and how each one of those are important with varying conditions.
We also learnt about how different things and techniques can be used in place of the usual ones being used currently in the country, like, using carbon fibre reinforcement in place of steel reinforcement which has 5 times more tensile strength than the latter.

PS-I is an exposure oriented course : We got a lot of practical exposure of our course civil engineering while being trained at JDA.

Name: Shivam Agarwal (2017B5A20969P)

Student Write-up

Short Summary of work done : The basic need of human survival, i.e. water is no more an easily accessed resource. The ever-increasing demand of water cannot be meant through present conventional sources. The increasing population implies increase in domestic waste and sewage and industrialization which implies increase in population. The situation has been handled by not throwing sewage directly into natural resources and treating it through STPs and reusing the water which ultimately reduces the demand of fresh water. Increasing population also implies increase in traffic and congestion in cities. To control the traffic and reduce congestion ROBs and Elevated road are being made, which not only reduce travel time but also helps in reducing pollution. In this PS, we learn how STPs work and how ROBs are made. We visited different rob sites and stp and learnt how they are made and how they work.

PS-I experience: We got many chances to learn new things and the engineers were very helpful in understanding all the things.

Learning outcome : we learnt about different techniques used in construction of ROB and hoe STPs work. We also got chance to research changes which can be done in process to make the process more efficient. We also learnt how to make BAR Bending Schedule and read diagrams of different components of bridge.

PS-I is an exposure oriented course : We learn many things in classes in colleges, but here we get to understand how those things are put in use in real life construction. And what is the difference in theoretical results and practical results.

PS-I station: JBM Auto Ltd. , Faridabad

Student

Name: Kshitiz Khosla (2017B2A81039P)

Student Write-up

Short Summary of work done : Study about the weld shop and press shop in the auto division of JBM industries.
Study about 5S supply chain management technique and see how it is implemented in JBM industries.
Did a project on increasing the production with the help of ganging of dies

PS-I experience: It was a great opportunity for me to experience the valuable exposure of an industry. There is a lot of difference between theoretical and practical knowledge. PS-1 enabled me to bridge this gap and also understand the different aspects of professional life.

Learning outcome : Learned about how manufacturing plants work - how orders are placed and manufactured through the study of weld shop and press shop.
Learned how to manage the industry's inventories through the study of 5S technique.
Study of the above mentioned things made me aware of the idea of ganging of dies and how production can be increased with the help of this.

PS-I is an exposure oriented course : PS-1 is a great platform set up by the PS division for the students of BITS Pilani as it enables us to understand the difference between theoretical and practical knowledge. The exposure of an industry is very valuable.

PS-I station: Jsw Energy , Vijaynagar

Student

Name: Kartik Agrawal (2017A4PS0443P)

Student Write-up

Short Summary of work done : We were tasked with finding the main reasons behind the increased percentage of Unburnt Carbon (UBC) in one of the units of the power plant and base d on our findings suggest changes. Firstly, we learned about the whole plant and its functioning in our induction program. Then for our project, we first collected data for various parameters that could be affecting the UBC. then, we pre-processed the data and ran multiple linear regressions on the data. We prepared three different models that helped us in finding correlations between these parameters and help us predict UBC values on the basis of different combinations of these parameters. Then, we also studied the mills being used for grinding the coal and compared it with various mills that could have been a suitable alternative for the existing mills. On the basis of our findings, we suggested 2 types of mills and theirs specifications.

PS-I experience: It was a wonderful and unexpected experience from a low CG cut off PS station. It clearly is one of the best core PS stations anyone can get. We were given a comprehensive approach towards working of a power plant and each and every employee showed keen interest in clearing our doubts. Then we had ample of options to choose our projects from. I was given one of my interest which helped me in exploring data science. So, I strengthened my core subjects as well as explored Data Science. Also, it was a great experience working in one of India's best power plants. I got a taste of how things work in a power plant, one I had been longing to have. To sum it up, this experience will help me expand my horizon and make me a better man, both nature and knowledge wise.

Learning outcome : I learned team work, core values, enhanced my concern for the environment. Then I strengthened my core subjects like thermodynamics, material science, etc. I also got a brief introduction to data science.

PS-I is an exposure oriented course : PS-1 indeed is an exposure oriented course. A person needs to supplement his learning with industrial exposure in order to standout and progress in life. JSW Energy is a good PS station which provides quality learning and exposure to its interns.

PS-I station: Jsw Steel , Vijaynagar

Student

Name: Valluri Manoj Kumar (2017A7PS0040H)

Student Write-up

Short Summary of work done : We created an Android application brings ease in the process of booking tickets to the employee's families(close to 7000 people) living in the nearby townships by reducing their efforts in traveling several kilometers for the sole purpose of booking a ticket. The second Android application helps in saving the employee's time by enabling instant access to the past years' financial records by presenting in the form a graph, while he/she previously had to browse the right excel sheet for accessing the desired parameter.

PS-I experience: I gained considerable amount of exposure on how the IT sector works. I received gratifying mentorship while working on our project and immense satisfaction after completing it. I also got first-hand experience on Design, Development and Testing of a product, in this case an Android Application.

Learning outcome : Both the applications created were developed on Android Studio. I had learned basics of Android Studio for creation of layouts for Front-end and used Java for functioning of the app. We used Google Firebase which served as the database and Razorpay payment portal to handle the online payments. I also learned to implement the Graph view functionalities into the application from an open sourced Java Archive file. The mentioned are the technical knowledge that I gained. Apart from these I gained experience on working will real life projects .

PS-I is an exposure oriented course : It surely felt like an exposure oriented course given that we worked in an IT environment, thereby giving us a prior experience.

Name: B Sai Puneeth (2017A7PS0013H)

Student Write-up

Short Summary of work done : Developing an Android application that enables users to book tickets for movie shows and events in general for the JMax theatre here in vidyanagar township. We used Android Studio for developing our basic application. For user sign in and storing the data for our application we have used firebase authentication and Real-time database respectively. When the user opens the application for the first time, he is greeted with a login page. Once he has logged in, the application remembers account for the device. Then he is directed to the main landing page which has a Slideshow of the photos that the admin puts up and the list of available shows or events. Users can view the description of each show by tapping on the image of that show. You can also view the trailer for the movie from YouTube. When the user clicks on the Book button, He is directed to a page which contains the seat layout of the theatre, user can select the seats he wants to book and proceed to payment. The payment is handled by Razorpay. We have also developed a supplementary application for the admin which enables him to add events and manage them. The admin can add a maximum of eight events and choose which ones should be visible to the users. He can also upload the pictures for the slideshow. We designed an android application for fetching the data of previous years within no time. The data can be retrieved using the application in the form of graphs which user desires, either bar graphs or line graphs. We used the open source functionalities for implementing Graphs in the android layouts. The desired data is stored in the online database Firebase which can be fetched on choosing the plant and the financial year the user wishes to keep track of.

PS-I experience: I got the experience of real-life IT sector and learnt development testing and designing of an application. I have improved my communication skills and presentation skills.

Learning outcome : I have learnt the front end and backend of android development how to use android studio and firebase for backend

PS-I is an exposure oriented course : Yes PS is an exposure oriented course

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Name: Rakshit Mishra (2017A2PS0884P)

Student Write-up

Short Summary of work done : The project starts from getting on site exposure of actual construction of a particular section of JSW Steel Ltd., Pellet Plant-III, experiencing real life problem situations and extending to the implementation of Scheduling Software-

Primavera into the planning and management of the site work. Although the process of scheduling has been implemented using Primavera, it is limited to estimated time calculation along with the extent to which the tasks are completed and the task of Resource Allocation is not considered (due to time constraints in the internship period)
Analysis of the site work for personal experience and for the purpose of scheduling is done. This process of scheduling has been performed after employing the Critical Path Method (CPM) in the network diagram assisted by calculating the Earliest Start Time (EST) and the Earliest Finish Time (EFT). First of all, an expected time of completion of project is calculated based on experience, then with the help of EST and EFT and then time optimization is achieved for each activity.
Signature

PS-I experience: My experience at PS-I was very good. I got an industry exposure and got to know about the intricacies of civil construction in particular. I was able to interact with many experienced and skilled people that helped me in improving my skils.

Learning outcome : The internship opportunity I had with JSW Steel was a great chance for learning and getting a touch of professional development in my academic background. I not only learned different construction phases of site construction but also tried my hands on Primavera (Planning and Scheduling software)

PS-I is an exposure oriented course : I agree to this statement. The kind of exposure that I got from PS-I at this age is beyond praise.

Name: Umang Agarwala (2017A2PS0890P)

Student Write-up

Short Summary of work done : Through this project, it intended to get an industrial exposure to Industrial infrastructure construction from getting on site exposure of actual construction of a particular section of JSW Steel Ltd., Coke Oven-V, experiencing real site related problem situations and extending to the implementation of Scheduling Software- Microsoft Project into the planning and management of the site work. Although the process of scheduling has been implemented using MS Project, it is limited to estimated time calculation along with the extent to which the tasks are completed and the task of Resource Allocation is not considered (due to time constraints in the internship period)
Apart from Scheduling and Planning, this study also extends on overcoming methods that company used to fulfill parameters of Structure and foundation. Design mix, gradation

and other parameters of Batching plant were studied and stated in the report. Keeping safety into consideration, a brief of the same has been compiled. Further reasons for schedule overrun has been explored and recommendations has been done for the same.

PS-I experience: From this PS, I got to learn a lot of things in the field of Construction and also a lot of about STEEL making.

Learning outcome : 1. Exposure to Construction site and learned about different activities performed on site which was followed by the difficulty faced during the execution faced.
2. Learnt Microsoft Project for scheduling and planning of construction activities in Coke Oven-V

PS-I is an exposure oriented course : I definitely agree on this statement, since PS-1 is for sophomores and not much is expected from 2nd year students on their respective specialization. Hence I feel it is good to take PS-1 as an exposure to the students of respective departments.

PS-I station: KEC International Ltd. , Jaipur

Student

Name: Ayush Hinger (2017A3PS0445G)

Student Write-up

Short Summary of work done : My project is creating a database system for the management of ISO Certifications that fulfills the requirement of company for document management. These ISO Certifications are used to uphold the quality level of the operation processes. The database has been created in the format of a website. A login page was created, by using HTML, CSS and PHP. Then, a database was created using phpMyAdmin of MySQL to manage username, passwords and documents.

PS-I experience: It was my first experience in the corporate sector. It was a very different experience from our academic curriculum. We were provided with excellent working conditions. Our instructors and mentors always helped us with patience. My peers were

very supportive of each other. I had the opportunity to meet so many interesting and helpful people through PS1.

Learning outcome : We used different languages and software used in web development. We learnt about real-world applications of our project and its practical applications. We learnt more about the working conditions in the corporate world. We learned to solve practical problem using theoretical knowledge. We also had the chance to improve our social and communication skills with the help of seminars.

PS-I is an exposure oriented course : We got exposure to real- world industrial problems and how to resolve them. This course provides an exposure to learn new platforms and new softwares that we never used before.

Name: Akhilesh Joshi (2017A8PS0706G)

Student Write-up

Short Summary of work done : This project is aimed at creating a back-end for the management of ISO Certifications that fulfils the requirement of the company's various operations. These ISO Certifications are used to uphold the quality level of the operation processes.This can be connected to the World Wide Web, thereby expanding its access to all the manufacturing plants, spread across India and abroad. First of all, a login page was created, by using HTML, CSS and PHP. We have tried to maximise user readability by providing the user with simple tools and options. This also results in efficient data retrieval and modification. The user can create his/her own account by creating a new user ID and password. After logging in, he/she is asked for their specific plant and department. The user of this website can add and view the certification files for his/her selected plant and department. The administrator or the admin account has been given the full control of the system. The admin can add, delete, edit, search, view and manage all the files uploaded on the system as well as manage the users of the website.

PS-I experience: As my first exposure to corporate work, PS 1 was very enlightening. It was a very different experience from our academic curriculum that we have experienced till now. We were provided with excellent working conditions and we were faced with challenging problems. However, throughout the PS, our instructors and mentors guided us with patience and wisdom. My peers were very supportive of each other and we helped each other out in many ways. I had the opportunity to meet so many interesting and helpful people through PS1, and I'll forever be grateful for this experience.

Learning outcome : After completing our project, we had a thorough understanding of the languages and software used in web development. We learnt about real-world applications of our project. Apart from this, we learnt more about the working conditions in the corporate world. We gained insight on practical problem solving using theoretical knowledge. We also learnt how to work harmoniously with our colleagues. We also had the chance to improve our social and communication skills.

PS-I is an exposure oriented course : PS-1 is definitely an exposure oriented course as we learnt the practical applications whatever classroom knowledge that we have gained in all these years. PS taught a lot of interpersonal skills and gave us an experience of working in a corporate workpla

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Name: Paras Jain (2017B4A30743P)

Student Write-up

Short Summary of work done : Our Work was mostly related to web application development for the use of the company. Our project involves making ISO document management system for the company which will be used by the company for their internal auditing processes. ISO Certification which includes ISO 9001, ISO 14001 and OHSAS 18001 is done for the company to check and certify whether the company is maintaining standards as per the industry and client requirements. The motivation of doing this project revolves around digitizing the current process for ISO Certification which is currently done by pen and paper. The entire project involves Front-End development, Back-End development and Database management of the website. The website will contain documents for various departments present in the plants like Galvanization, HR, Finance and Accounts, IT and Planning Departments. The website was initially developed only for the Jaipur Plant of KEC International but was extended to all the three plants of KEC present in India.

PS-I experience: The PS-1 program really gave me insider knowledge into how the industry works, and I was able to develop my skills. I had a great group of professionals that I worked under. I'm excited to use what I learned there in a long-term position.

Learning outcome : The project taught us skills in programming in PHP, JavaScript, SQL as well as HTML and CSS. We also gained domain knowledge in website hosting and back-end algorithm development and management. Our mentor stressed about security while building the website. Appropriate security measures have been taken for the

development of the website to protect it from hackers once the website is launched. The company assisted us in developing skills in this arena as well as the overall project.
An important skill learnt by us during this program was working professionally with the employees of the organization to do critical value-addition to the products of the company and in process develop and enhance our soft-skills. This program and our project gave us valuable insights into the corporate culture of multi-national companies like KEC and in turn teaching us a lot about professionalism and work-ethics. This program helped us to understand about working on a small module of a big project and then working on the challenging but the most interesting part of integrating these small modules into building the entire project.

PS-I is an exposure oriented course : I completely agree with this. Working at an MNC instills a corporate culture in students and allows us to witness the industry even before working there. The exposure gained during PS-1 has been important to the overall development.

PS-I station: Kota Super Thermal Power Station , Kota

Student

Name: Manu gaur (2017A3PS0499H)

Student Write-up

Short Summary of work done : The practice school at KTPS was oriented on the electronics there. Our main aim was to know the working of different instruments present there and suggest improvements that can be made so as to make the plant more efficient. In order to do so, we were first taken for a detailed plant visit so that we get an overview of what is actually happening in the plant. Also, we were given theoretical and practical knowledge of mechanical components present there such as turbines, motors, generators, etc so that it becomes easy for us to understand electrical part better. In electrical part, we studied the instruments such as RTD, Thermocouple and Pressure Transmitters. After done with the detailed study of electrical portion; for our knowledge, we were also given a tour to the DM plant which demineralize the chambal water so that it can be used in pure steam generation and also of the coal handling plant where we

analysed heavy machines such as wagon tippler and stacker reclaimer. This complete training of around 1.5 months gave us a knowledge and experience that will help us a lot in future.

PS-I experience: This PS was full of opportunities. The way we were introduced to the power plant really motivates me to look further into electrical machines and explore this field.

Learning outcome : Getting a practical experience on the machine helped me understand better about the actual Working of Instrumentation and control of them.

PS-I is an exposure oriented course : The exposure PS-1 provided was more than expected. The mentors were helpful and helped us in all our demands to make our PS-1 as good as possible.

PS-I station: L & T , Mumbai

Student

Name: Samarpit Swain (2017A4PS0562P)

Student Write-up

Short Summary of work done : I was allotted to the Thermal Design department-Design competency center which fabricates heat exchanger equipment. My project was the analysis of corrosion phenomenon in waste heat boilers called 'Metal Dusting'. I was told to prepare a mathematical model which effectively predicts the temperature range where metal dusting occurs.It was mostly a desk-based job, with a few observation trips to the L&T workshops.

PS-I experience: It was thoroughly enriching experience. I got to learn a lot on the technical end as well as the professional end. It was great to work with a lot of employees whose inputs were very helpful for me.

Learning outcome : On the technical front, I brushed up and improved my skills on working on excel sheets and also had an introduction to computational fluid dynamics (CFD) on the software, fluent. Finally I had read the basic concepts of Heat Transfer which will be a CDC for me next semester .
But most importantly I learnt the importance of work ethics in a professional workplace. Everybody was very helpful an hardworking, which made my training worthwhile.

PS-I is an exposure oriented course : It is absolutely. We get to know how the industry functions and we get to apply the knowledge we gain from our lectures an textbooks.

PS-I station: Manikgarh CEMENT , Chandrapur

Student

Name: Utkarsh Grover (2017A7PS1428H)

Student Write-up

Short Summary of work done : i worked on automated tracking of vehicles entering and leaving the company premises , the goal being to reduce turnaround time(TAT) , which is the total time a vehicle(dumper) spends inside the premises loading/unloading . This was achieved with the help of RFID(Radio Frequency IDentification) technology . Each vehicle was assigned an RFID tag and RFID readers have been installed at various checkpoints where previously the task of giving instructions or recording data was done by hand and further wherever required . As the vehicle approaches the reader , the reader reads the information on tag and further computation leads to action like raising up the boom barrier , if its on an entry or exit point or weighing the truck if it is stationed at weigh bridge or filling it up if it is on the filling station , et cetera et cetera . This ensures higher efficiency which inturn leads to more profits for the company.

PS-I experience: PS was a great learning experience for me. I was able to witness the working of an actual industry and be a part of it to big extent . I was able to learn about various procedures and protocols from the experts working in that field which was very

helpful for me . I was also able to go through what i was taught in college and use it to solve real life problems and sharpen my skills henceforth .

Learning outcome : Overall i learned how an automated vehicle identification is set up inside an manufacturing industry. This included gaining knowledge about RFID technology and further how RFID identification is set up the hardware and software aspects of it. Also i briefly learned about the working of network inside the company premises .

PS-I is an exposure oriented course : PS gave me a stage to channel my energy and efforts into solving real life problems and provided me with a great learning opportunity which helped me in sharpening my previous skills and learning new skills.

Name: Mohammad Fauzaan Qureshi (2017A2PS0663P)

Student Write-up

Short Summary of work done : I worked in the Systems Department on "RFID aided tracking of trucks in the plant". This project, as name suggests, implemented RFID technology to track and guide the trucks around the Packaging Unit of factory. The reason for undertaking this project was to decrease the Total in Time for each truck. This improves efficiency and productivity of plant.
The RFID tags are issued to trucks at Gate-in and there are RFID sensors at various locations such as Yard-in, Weigh Bridges, Packing area and Gate-out. The data from these sensors are sent to PLMS (Plant Logistics and Management System) app integrated with SAP (server) where it is processed and used to allot Sales/Delivery order to transporters and update the LED display and traffic signals, installed at above mentioned locations, to control truck movement.
As we implemented automation, the packaging process has become more transparent, accountable. This has also increased the safety and reliability of the process even at times of high traffic (February-March).

PS-I experience: PS1 helped me see the difference between classroom learning and practical applications at field. This was my first corporate experience too. It helps understand the expectation of professionals in field, from you.

Learning outcome : I got to learn more about RFID technology and witness the use and application of Internet of Things on such a wide scale. I also learnt basics of networking and database management.

PS-I is an exposure oriented course : PS1 is an exposure oriented course. This is true. In my case, being from Civil branch and working in IT department gave me a taste of what to expect from IT sector. This helped me decide better about what field to pursue.

PS-I station: Maruti Suzuki India Limited , Gurgaon

Student

Name: Shah Parth Chirag (2017A4PS0917G)

Student Write-up

Short Summary of work done : The work which I was allotted to was regarding line efficiency improvement, where one has to understand the line briefly. Firstly, each and every line in the department has to be studied in depth. All the stations on each line are very important. Basically it was regarding assembling the engine, where one can apply theoretical knowledge in real world. For improvement in efficiency , the causes which delays the line more were studied. Then few factors were focused on which majorly contributed in delaying the efficiency of the line. Then how to reduce those causes which delayed more was studied.

PS-I experience: It was a good experience at Maruti Suzuki. Different models and it's variants were seen. Each department had their specific work which they focused on. They had their daily targets which they produced at the best quality. Here we apply our technical and theoretical knowledge can be applied to the real world problems.

Learning outcome : Since the department was based on assembling the engine. Different components and functions of those were studied. Finally, the efficiency part was important, where how one can maximize the efficiency was the aim. Few major causes which affected efficiency were studied and decreased the impact of it .

PS-I is an exposure oriented course : Yess, through PS1 students gets a good exposure by visiting the company and working in it. It helps how the theoretical knowledge applies in the real and the industrial world.

Name: Apoorav Dhingra (2017B4A40788P)

Student Write-up

Short Summary of work done : This report thoroughly demonstrates the work done during the INTERNSHIP TRAINING conducted at Maruti Suzuki India Limited. It is made by following all the rules, guiding principles, regulations and techniques which Maruti Suzuki has adopted and successfully implemented in its production process, which has led Maruti Suzuki to have an edge over its contemporary competitors from the last 37 years.
A brief overview of Machine Shop 1-2, Gurugram have been discussed. Different types of actions to be done in case of emergency have been looked into and how it can be eliminated. Further, the project allotted “Operation-miss Detection in Cylindrical Block Line of Machine shop 1-2, Suggesting ways to fool-proof machines and Study of WIS” has been discussed in detail.
By the study of GD&T symbols one can easily read the Engineering Drawing sheets of the components for better understanding of the machine and its tools.
The study of WIS helps one in understanding the functioning of the machine, various safety equipment which are necessary to be taken into consideration while being in the respective line, procedure of loading and unloading of the component by the operator.
All these studies helped me in learning the procedure and giving suggestion to avoid miss-operation in respective machines of Cylindrical Block line of Machine-Shop 1-2.

PS-I experience: I had a great experience. I get to know about Vehicle Manufacturing Process and how company is carrying all its activities by taking Safety as priority.
I worked in Cylindrical Block line of Machine Shop 1-2 where I get to know about machining process which is quite fascinating task.

Learning outcome : POKA-YOKE techniques, GD&T symbols, Various mechanical operations, Minitab software, MS-Excel, MS-Word

PS-I is an exposure oriented course : Yes, I had the best experience of my life

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PS-I station: Mumbai Rail Vikas Corporation Ltd. , Mumbai

Student

Name: Samyak Jain (2017A2PS0052P)

Student Write-up

Short Summary of work done : Our work at MRVC included 4 projects which were studying about the 5th and 6th rail-line construction between Thane and Diva, Flyover Bridge construction at Mumbra and FOB construction. During the first project we learned to apply out book knowledge about earthwork on the field and saw how all the tests are conducted. We learned the various processes used by MRVC to lay tracks and how the earthwork is done. We learned how to estimate and do costing of a toe-wall along with its reinforcement. In second project we learned about the basics of a bridge construction and also learned about the different components of a bridge. We were also given a brief explanation of the type of reinforcement used and Pre-stresseed concrete. In 3rd project we learned about the basics of FOB construction and studied about steel structures.

PS-I experience: We got a learn a lot about the various procedure used by MRVC for FOB , flyover bridge and rail-line construction. We applied our knowledge on the field and learned about new concreting methods and steel structures. It was thus an amazing experience.

Learning outcome : We learnt about new concreting methods, steel structure and pre-stressed concrete. We also learned about how columns are erected and made. We went to RMC plant and saw how concrete is made using MCI-550 software.

PS-I is an exposure oriented course : Yes, PS-1 is an exposure oriented course as i really got to experience the field and how to apply our knowledge in the field.

Name: Lawankar Sameer Manish (2017A2PS0098P)

Student Write-up

Short Summary of work done : We worked on projects which were currently under progress during our internship. The projects were - 5th and 6th line construction between Thane-Diva,railway flyover bridge between Kalwa-Diva and FOB construction at Mumbai suburban stations.We visited many sites where work was in working stage.We got to apply many theories learnt during our 2nd year in practical life. We got to know the tests which are conducted on field for quality testing of soil,concrete.We got to know the complete procedure of laying down of tracks starting from lower most layer of blanket soil till the actual tracks,construction of FOBs using girders,steel plates,got to know an introduction about reinforcements.We saw many GAD drawings and actually got a chance to apply the concept of estimation studied in last semester to calculate the cost of a column or a girder.

PS-I experience: PS-I at MRVC Mumbai is really good. The project engineers allotted to us during our whole project were very supportive and gave us a lot of information. We got to apply concepts taught in the class directly and was very helpful to know their practical usage.

Learning outcome : Procedures and challenges faced during construction of FOBs,Railway flyover bridges and laying of tracks.
How tender talks are done between contractor and company.
Cost and estimation of steel used.
Different tests done to check the quality of soil,concrete.

PS-I is an exposure oriented course : Yes,in my case,it was really an exposure oriented course.I got to know many things which were not clear during the ongoing theory course.Also,I got to know the real challenges which the company faces(specially during rainy season) and how they tackle it.

Name: Siddhant Bhatt (2017A3PS0593H)

Student Write-up

Short Summary of work done : Three different groups of students were made based on the work being allotted. My group consisted of three people. We were allotted two projects. The first project was to develop an Android app for Mumbai Railway Vikas Corporation (MRVC) employees to monitor in real time the stages of development at the different sites where infrastructure projects are going on. This app will help MRVC to improve communication about the materials required for the construction of new infrastructure, their quantum needed and the costs related to the work done between the administration and the on-site managers of those respective projects. Basically it will help connect the administration and on site managers effectively and in real time. This was the project which was focused more on during PS-1 and we were able to make a working

model of the app. The second project was to learn about a software known a ETAP. ETAP is used to design traction power supply system for a line on which electrification is to be taken up. It helps to to check the adequacy of capacity of Traction substations of an already electrified line due to increase in the number/load of trains. To help understand the software better we simulated some trains in the Central Railway Line. We observed the outputs of acceleration, traction power and current graphs and understood some of the limitations and bugs of the software.

PS-I experience: Overall it was a good experience as I got to learn a lot. Work culture at MRVC is really good and the people there are very helpful.

Learning outcome : As I am from EEE background I had to learn a lot of things. I learnt JAVA, Object-oriented programming and Database management system concepts required for the development of the app. As we used Android Studio for app development, I learnt that too. Also learning about the different processes involved before implementing a new train was a good experience.

PS-I is an exposure oriented course : I agree that that PS-1 is an exposure oriented course as it helps us to know how the Corporate World works. It gives us the industry experience which will be helpful in future.

PS-I station: National Aluminium Company Limited - Smelter Plant , Damanjodi

Student

Name: BALIVADA PRANAV SAI (2017B4A41468H)

Student Write-up

Short Summary of work done : Initially we learnt about the process involved in making alumina in NALCO. Learnt about the importance of safety in plant. Also about the history of NALCO in our orientation classes. Later we were allotted to our respective sites. There we took up the project of making a reliability centered maintenance model by studying 2 pumps used in NALCO(GEHO and P1108 A/B).

PS-I experience: It was really good. Working in such a large organisation was an experience of a different kind. We have learnt a lot of things and most importantly our exposure to industry life was very important think that I brought back with me.

Learning outcome : Learnt about different kinds of pumps and agitators used and their working mechanisms in NALCO. Learnt about the different kinds of maintenance practices and its importance. Learnt how make a reliability centered maintenance model and computing FMEA- failure mode and effect analysis.

PS-I is an exposure oriented course : Totally true.

PS-I station: National Textile Corporation Limited , New delhi

Student

Name: Samkit Jain (2017B2A71723H)

Student Write-up

Short Summary of work done : Our assignment was based on need and importance of training. A survey was conducted by using a questionnaire which is based on needs and importance of training. Questionnaires were filled by 11 people who are working in different departments. While writing down this assignment we have an assumption of having a relationship between training and the productivity of the organization, motivation of the workforce, staffs being more creative, solution finder for the organization and tool for getting ideas from the workforce.

PS-I experience: We had a great experience at our station, National Textile Corporation Limited is a PSU and we totally enjoyed our time there. We got full opportunity to represent ourselves and utilise our time and make ourselves productive. We had a nice workplace with helpful mentors and faculty in charge.

Learning outcome : We collected data that can help NTC and organization to make its employees more effective through different training methods as they got to know the

difficulties faced by a particular employee and his or her weaknesses and how to work upon them through the survey conducted. Our project can help NTC to evaluate and make its employees better. We did SWOT analysis too for a better understanding.

PS-I is an exposure oriented course : I totally agree with the above statement, we had a great exposure and chance to prove ourselves. We learnt a lot throughout the whole duration and tackled many new obstacles that an organisation faces.

PS-I station: New Bhopal Textile Mills, Bhopal (National Textile Corporation Ltd) , Bhopal

Student

Name: Vinamra Aggarwal (2017A1PS0850P)

Student Write-up

Short Summary of work done : We had to analyze the yarn obtained from the ring frame machines in the mill on the basis of several quality parameters and prepare a report about the same . We developed surface response equations for various quality factors such as twist , count and tenacity . All in all we gained a thorough understanding of the working of the mill and the process of the production of yarn from raw cotton .

PS-I experience: We were shown every section of the mill . Given a detailed explanation of the working of each and every machine . On the basis of this we were then given a project to analyze samples of yarn run on different settings of the machine to develop surface response equations by the box benkhen method. Ten samples of yarn was taken as the basis for each reading and sent to the testing lab whose test reports were analysed and used to do the aforementioned .

Learning outcome : Learnt about textile industry and the working conditions of engineers and labourers onsite .

PS-I is an exposure oriented course : It exposes you to the reality that onsite engineers have to face. How practical knowledge often supersedes theoretical knowledge on the

job . There is a need to develop an ability to take decisions on the fly to manage day to day processes.

PS-I station: Noida Metro Rail Corporation (NMRC) , Noida

Student

Name: Dishika Rastogi (2017B4AA1678H)

Student Write-up

Short Summary of work done : Noida Metro (on the Aqua line) encompasses 21 stations connecting twin cities Noida and Greater Noida. All the 21 stations require signalling and communication systems for the safe passage of the metros, for clearing the routes, and safety of the passengers. Visiting and understanding the Signalling, Telecom and AFC (Automatic Fare Collection) departments in the 21 metro stations of NMRC and Depot, which is the centre for the maintenance, signalling, AFC, Electrical, for the metro. (Fieldwork). The way the signal travels across the stations and metro. The communication, announcements, monitoring through CCTV is done by the Telecom. AFC is responsible to provide access to the passengers through the validator gates into the paid area of the station. AFC includes the ticketing, excess fare, penalties as well. Also, making a Fault Management System for the Stations to report the faults occurring to the centre (Operations Control Center- OCC) in real time. Provisioned to be set up in the Station Control rooms in each of the stations.

PS-I experience: It has been a great opportunity to work for an esteemed and booming organisation as NMRC. It was amazing having a firsthand experience to understand the logistics behind the public transit of passengers every day and visiting the Equipment Rooms such as Signalling and Telecom of which the general public doesn't have access to. Interacting with the people working for NMRC as Technicians, Junior Engineers and Department Heads have helped in giving us exposure and understanding the concepts better.

Learning outcome : How the metro system works, Signalling and Telecom in a metro system, how to make a fault management system.

PS-I is an exposure oriented course : Definitely, it gives us a taste of corporate life and how to work for a company. It also enables us to gather practical knowledge which is difficult to attain in a classroom.

PS-I station: Numancia Aerospace Private Limited (Pixxel) , Bangalore

Student

Name: Atmadeep Banerjee (2017A7PS0101P)

Student Write-up

Short Summary of work done : My PS-I project was to train a deep learning model to extract the road network in the form of a graph from a satellite image. I used a U-Net model to perform binary image segmentation to locate the roads in the form of a mask. From this mask, the road network graph was extracted using a graph algorithm. After setting up a simple baseline model, the target was to improve prediction performance by trying various tweaks and figuring out what worked better. By the end of PS-I we were able to build a reasonably performant model. This model will be deployed by the PS station on their server.

PS-I experience: PS-I allowed me to quickly learn a lot without worrying about academics as on campus. It provided me with a platform to try out what I learnt to reinforce my understanding. My PS station gave me the freedom to experiment and research in the rapidly developing field of deep learning, allowing me to gain experience that will be invaluable for my future.

Learning outcome : I learnt about intricacies of computer vision and deep learning in the area of image segmentation. I became very efficient at writing the code for new deep learning models and training them to gain an understanding of what approaches perform better. I learnt about various techniques to stabilize the training of deep learning models and improve performance.

PS-I is an exposure oriented course : The exposure that comes from PS-I varies greatly from station to station. A well established company may give a "better exposure" in a traditional sense, but a rapidly growing startup like my PS station can provide a far superior learning outcome.

Name: Ashrut Kumar (2017A7PS0137G)

Student Write-up

Short Summary of work done : I was a part of the AI - Team in Pixxel. My project name was "Application of ML/DL on satellite imagery". For this first I had to research various existing data-sets of satellite images and what all analysis can be done with the use of them. Then I had to create a data- set generation pipeline, which will create the dataset for the road network detection in satellite image model to train on. For this I used python and various APIs like Bing static map, Google road static map, Nominatim geo-coding API , etc. to download satellite images and the road network masks, so that a image segmentation model can be trained on it. After that I used some existing data-sets to create a land use classification model (boh single label and multi label) in pytorch

PS-I experience: Overall the experience was pretty good. I got to learn a lot of new things, meet a lot of new people doing amazing things with satellite images. The peer- network was pretty good amongst us ps-1 interns. As all the work had to be done by us, we worked together , learning new things ourselves with each other's guidance.

Learning outcome : I learnt a lot of new things. I learnt how to use python to access APIs and how to handle images with python. I also learnt quite a decent amount of deep-learning and how to use pytorch to create various models for different purposes.

PS-I is an exposure oriented course : The statement is quite true. The exposure we got about how a company works , the type of service it provides, the work ethics, the standards was a quite valuable experience for us.

PS-I station: Podar Mills, Mumbai (National Textile Corporation Ltd) , Mumbai

Student

Name: Gaurav Gandhi (2017A8PS0724G)

Student Write-up

Short Summary of work done : Worked on an Android application to streamline leave application process and created a basic frame work for data analytics for predicting future trends

PS-I experience: Overall it was a holistic learning experience with a decent amount of exposure to work and challenges faced by a public sector undertaking

Learning outcome : Learnt about android studio and java. Basics of databases. Also learnt about anaconda integrated development environment, python and basic analytic techniques

PS-I is an exposure oriented course : Yes, it helps understand how a work environment functions, the hierarchy in organizations and various aspects of professional life

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Name: Ajinkya Deshpande (2017A7PS0152G)

Student Write-up

Short Summary of work done : After taking a tour of the Textile Plant, we found a few issues that could be addressed. We noticed that there was a lot of inventory in the form various Machines and final product such as the yarn rolls. Currently, inventory is managed on pen and paper basis and later on entered into an online database by the clerk so that the regional office of NTCL can keep track of the inventory and assets. There are a lot of risks involved in using the pen and paper method. To solve this problem, our app has a multi-tab layout which will have information about the inventory such as the status

(whether maintenance is required or not). If there is a maintenance due, a push notification reminder system that remind sthe General Manager in-charge and provide the necessary details. This way there won't be risks and it will be easier for the General Manager to keep track of the minute details. For the supply chain management, we have provided a tab to track the inflow of raw material and outflow of the final product to the client. Lastly, we will add an anonymous complaints portal tab so that anybody can put up their complaints and problems regarding the administrative work without any repercussions. The complaint will be displayed when the person against whom the complaint is registered logs in to the app.

PS-I experience: Overall PS1 was a good learning experience. Unfortunately, the organisation had no work for CS students. But despite this, we proposed our own projects and worked on them. We used online tutorials to learn. Throughout the course we learnt more and more about Android Development. We also developed interpersonal skills by interacting with the staff.

Learning outcome : We learnt the basics of android development and also developed interpersonal skills.

PS-I is an exposure oriented course : PS-1 focuses on exposing students to the real world, and preparing them for the future. In that regard PS1 has been successful, as I now have a better understanding of how organizations function and what to expect from a working environment in the future.

PS-I station: Preto Tooling Systems , Hyderabad

Student

Name: Bhavik S. Punjari (2017A4PS1207H)

Student Write-up

Short Summary of work done : The work done at the PS station was mostly observation based. The students were mainly tasked with observing the operation and mechanisms of the various machines present throughout the plant, and were asked to learn about the

underlying operating principles on their own. They also got to learn about the entire manufacturing process of the commodity produced by the organization, i.e, Press Tools. Additionally, they also learned about the various principles and practices employed by the organization in the 3 major stages of production: Design, Manufacturing & Development. The various design software and their usage by the organization was also observed. A number of industrial quality assurance methods were also scrutinized and learnt about. The various machine types, as well as their compositions, usage, advantages, disadvantages and specifics were learnt about.

PS-I experience: My PS experience was a valuable insight into the way small scale firms operate, as well as the limitations and difficulties they face. In this context, I was able to observe, in depth, the way Preto Tooling Systems performs it's entire Press Tool manufacturing process. I also had the opportunity to see the break up of responsibility, as well as the division of responsibility and leadership within the organization. I also learned how to interact and effectively communicate with my group members to efficiently complete the group assignments we were given. Furthermore, I was able to polish my presentation skills through the seminar evaluation component. Overall, it was quite an enriching experience.

Learning outcome : I learned about the functioning, composition, usages, material considerations of Press Tools. I also learnt about their total manufacturing process. I also learnt about the administrative aspect of organization work and the division of responsibility and specialization within my PS station.

PS-I is an exposure oriented course : I agree with the statement, as I was indeed exposed to a variety of new knowledge.

PS-I station: Rawan Cement Works , Raipur

Student

Name: B saivarun reddy (2017AAPS0347H)

Student Write-up

Short Summary of work done : My project was to make the coal reclaimer fully automated. First I have to study the limestone reclaimer stacker circuit and observe it's working and the various parts of the above mentioned. Identify the working conditions for the reclaimer. Then go on to coal reclaimer and study it in detail and identify the working conditions. Now compare the both reclaimers and list out the differences. I suggested few ways to make the coal reclaimer automated by parting the stacking piles into the number of types of coal used in that way there won't be any issues with selecting the type of coal. Then comes the problem of point stacking, where the workers dump the coal onto the existing stack and this irregularities cause the reclaimer to fail. To solve this I suggested a mobile hopper that can reclaim coal and also mobile at the same time so instead of point stacking in the piling space we can allot a dedicated space for point stacking and then we can load that coal to the mobile hopper and then it directly reclaims the coal onto reclaimer conveyor belt.

PS-I experience: It has been a nice experience overall and I learned a lot from my mentor and others. I would like to thank my ps instructor for his constant support. We were very fortunate to be provided with many facilities that many other stations doesn't have.

Learning outcome : I experienced the realtime working in a large plant such as rawan and the lifestyle in it. I learned how various equipment works and sensors work and how the raw materials are transported to the plant.

PS-I is an exposure oriented course : Yes it is a exposure oriented course, I had to participate in many activities at the plant and had to visit various work places to gain the knowledge needed for my project

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Name: Vishnu M Pillai (2017A3PS0508H)

Student Write-up

Short Summary of work done : Visiting the whole plant (Mainly the electrical equipment)as told by my mentor. Next I started off with Reading and making SLD's (Single Line diagrams) which is very important for understanding electrical connections. Study of Various Power Sources at Rawan Cement Works which are Solar, TPP(Thermal power plant), Diesel Generator, WHRS(Waste heat) etc and also about its consumption. Also learned about Power distribution and how MPSS(Main Power Sub station provides electricity to all parts of the plant.) Power required to run individual motors and their connections(VFD's,MCC's etc).Studying Power Reports and Correlation between Production and Power consumption.Studied about various connection Panels and Motors

(Slip ring motors, 3P induction motors etc.). Completion of Reports and Presentations during mid June for mid-sem evaluation.Now the second part of my Project is Power Optimization. For power optimization there are two ways 1. To replace motors with more efficient ones, 2.install motor controlling mechanism's like VFD's which reduce power consumption a lot. Prepared a table for Power savings due to VFD's. Also took a look at the Slip Ring induction motor and its Mechanism.

PS-I experience: Overall PS-1 is a fruitful experience because before this I had no Idea about the electrical equipment in real life and also gave me real experience in workings of the plant. All the employees were helpful and gave me valuable feedback and information. PS-1 gave me new challenges which I was facing for the first time. We also helped in organizing a cultural event which shows a lot about a company.

Learning outcome : Real world Electrical Application. Use of Software's such as Autocad to make Electrical connection drawings. Making SLD's(Single Line Diagrams). Study on Power Optimization and its need. A look on Power distribution and reports.

PS-I is an exposure oriented course : PS-1 obviously requires interaction with people and its also our first time exposure to the professional world. Hence I feel its is exposure oriented because knowing about all this is not possible in classrooms , which is the main objective of PS-1.

Name: Sandeep Jimmy Choolackal (2017A4PS0869H)

Student Write-up

Short Summary of work done : The project that was allotted was to find out ways to increase the efficiency of the multistage centrifugal pump that is used in the Boiler Feed water Pump system in running the IR CFBC Thermal Power Plant. However, the first half of the project work involved studying about what exactly the Thermal Power plant's characteristics was, the output, the specifics, etc. This involves learning the process flow of the entire power plant from the procurement of the fuel, ie, coal, transport and refinement of the working fluid, ie the different states of water, to the final smokeless air that comes out of the chimney at the end of the process. In due course the project shifted to the aforementioned efficiency study and improvement suggestions, with specific ideas to be introduced about stage blinding and VFDs (Variable Frequency Drive). There was also steps taken to see whether or not there is scope for a possible power reduction itself to happen so as to reduce the overall auxiliary power diverted to run the plant itself, which would directly contribute to increasing the overall output. This also came into particular

focus since the Boiler Feed Pump was the unit that consumed the largest amount of auxiliary power in the entire plant.

PS-I experience: I was given a schedule by my on site mentor assigned from the factory's side. It charted out the work in a detailed manner and I was able to be up to date with all the work. In addition to that, I was also instructed to learn the bulk of the functioning of the Thermal Power Plant where I was assigned to since it would be a good way to gain practical knowledge from the perspective of my branch.

Learning outcome : I learnt in depth about the working of an Internal Recirculation Circulating Fluidised Bed Combustion Boiler, abbreviated to IR-CFBC Boiler. In addition to learning about its environmental impact, thermodynamic cycle, etc., I also had to learn in detail about the working of a multistage centrifugal pump and how its efficiency can be improved from a practical perspective rather than a theoretical one.

PS-I is an exposure oriented course : It is true. The knowledge that I have accumulated in this short a time cannot be easily understood without having firsthand experience.

Name: Kushal Singhi (2017A2PS0963P)

Student Write-up

Short Summary of work done : My project was on reverse logistics in Rawan cement works. Reverse logistics combines two concepts: logistics activity and reverse process. It manages the tangible and intangible flows from the market to the production site, and at the same time, it is a distribution channel, where the cargo route goes in the opposite direction, unlike the normal one. I got the chance to meet top officials within the UltraTech unit, I was also given a platform where we can explain our ideas in front to decision makers.

PS-I experience: UltraTech Cement Ltd. is the largest manufacturer of grey cement, Ready Mix Concrete (RMC) and white cement in India. It is also one of the leading cement producers globally. UltraTech as a brand embodies 'strength', 'reliability' and 'innovation'. Together, these attributes inspire engineers to stretch the limits of their imagination to create homes, buildings and structures that define the new India.The company has a consolidated capacity* of 102.75 Million Tonnes Per Annum (MTPA) of grey cement. UltraTech Cement has 20 integrated plants, 1 clinkerisation plant, 26 grinding units and 7 bulk terminals. Its operations span across India, UAE, Bahrain, Bangladesh and Sri Lanka. UltraTech Cement is also India's largest exporter of cement reaching out to meet

the demand in countries around the Indian Ocean and the Middle East. Overall working in such a conglomerate company was nice experince.

Learning outcome : 1.Understanding the entire production process
2.the detailed study of various unit operations and unit processes involved in the production plant
3.Carry out the material and energy balance of different processes
4.Study and Design of equipment used in the production processes
5.Optimization of process parameters for maximizing the throughput and quality of the finished product
6.Retrofitting of existing processes in the plant
7.Trouble shooting of various problems through case studies
8.Optimizing the energy requirement of the given process plant
10.The detailed study on the fabrication of various process equipment (like Pressure vessels, Heat Exchangers, Columns, pipes etc)
11.Understand process plants and their functions
12.Human resource development activities of the company including employee relation, industrial relation and administration
13.Organization hierarchy, power and responsibilities
14.Management of skilled and unskilled manpower
15. Maintaining the contractor's records, daily reports, bills, payments on a daily & monthly basis, etc.

PS-I is an exposure oriented course : Yes,it helped me in understanding what kind of work field i am really interested in.

PS-I station: Research design & Standards Organisation (RDSO) , Lucknow

Student

Name: Vipul Tiwari (20170916A4PS0916G)

Student Write-up

Short Summary of work done : The objective of the project allotted to me was to find the most appropriate rolling stock resistance equation, out of the standard equations used, for Train-18. The project involved construction of a 3D model of train-18 and its CFD analysis, followed by data comparison, to find the equation which gives the closest values. We have also done a short literature survey of documents issued by other railways, to give some recommendations to improve the aerodynamics of trainset

PS-I experience: The overall experience was good, everyone in the organisation was cooperative and helpful. The time spent here allowed me to improve my interpersonal skills and learn about new engineering domains.

Learning outcome : I have learnt about the solid modelling software solidworks and UG-NX.
I have also learnt about the general process of CFD using Ansys software, including turbulence models etc.

PS-I is an exposure oriented course : The course provides industry exposure to students, and enables them to learn about how actually is the work done in professional organisations. We learn about the latest technologies used by industries which helps us in the future.

PS-I station: Rourkela Steel Plant , Rourkela

Student

Name: Joel Kundu (2017ABPS1399H)

Student Write-up

Short Summary of work done : We were given a tour of all the major plants and units of the Rourkela Steel Plant during are first week which helped us appreciate the effort that goes into running such a huge plant. During the tour, our guides explained in detail about each and every relevant and important equipment and machinery in all the units we visited. After the tour we were assigned the mechanical shop and so we were given a tour of the shop with our guide telling us in brief the need for the mechanical shop, all the equipment present and what are the procedures and safety standards followed in the

shop.Over the course of the remaining days Mr. Jena (AGM mechanical shop, RSP) also our guide and supervisor taught us all about CNC machining including how to write the code to operate such machines, he also showed and explained to us all the tools and features available and how we can use them. Our project was to learn about CAD/CAM, FANUC and SIEMENS for which our supervisor provided us with the relevant study materials and personally helped us. All the while this was happening we had 2 group discussions, 2 tests and 2 conferences alongside our day to day work at the Steel Plant.

PS-I experience: PS-1 was my first exposure to an industrial environment which taught me a lot. Our supervisors were very helpful and it was really a fun experience getting to learn things practically on the field rather than theoretically in a classroom.

Learning outcome : I learned a lot about the operations of an integrated steel plant. I also learned a lot about CNC machining and G-code and M-code programming.

PS-I is an exposure oriented course : I Agree as i got a lot of opportunities to learn and apply my knowledge practically during my PS-1

Name: Kunal Katiyar (2017B4A21446H)

Student Write-up

Short Summary of work done : I being a civil, dual degree student had my project on water logging and waste water management concerned issues in RSP. The first thing that you have to understand is why this is a currently pressing issue for RSP? Which takes us back to the floods of june'99 where in due to increasing water level and excessive water logging some of the units of RSP had to be shut down. Which resulted in a loss suffered by the plant. After which the plant took the decision to create pre monsoon team to oversee such future ordeals and a post monsoon team to collect important information kept for use in the subsequent season. In my time here at the plant i started by going through the various units of RSP and getting a basic idea of how this plant works as a whole. After i had that basic idea me and fellow civil students went on to our project which required us to be aware of the complete drainage system of RSP with which our PS instructor helped by providing used a tour of the entire drainage system (which included nallahs, artificial nallahs and outtakes) helping us understand how it worked and how they had improved it after the floods.
After that we visited different units (like CRM, HRM) to coordinate with them and understand their issues with water logging. In totality the entire helped me understand the practical application of what i have studied.

PS-I experience: I would say my PS experience was quite enriching as a civil engineer. As it helped me understand the basic mechanism of how a steel plant worked, the various problems faced by them and what can i do to help them or what role could i play as a future civil engineering graduate to help them for a proper and smooth functioning of the plant.

Learning outcome : My PS 1 helped me understand three things the working of a steel plant, the role of a civil engineer working at a steel plant and the peculiarities of a drainage system and what measures could be taken to help ensure its better functioning.

PS-I is an exposure oriented course : I completely agree with the statement as it helps the students to broaden their horizon as an engineer. Helping them understand what it takes to be engineering in the real world and sure helps you add a silver feather to your cap.

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Name: SHASHWAT SAXENA (2017AAPS0451H)

Student Write-up

Short Summary of work done : Initially we went through several department of Rourkela steel plant with one department visit per day .Then we were allotted our respective branch related projects and we started working on them .We did a detailed study on the UPS in general and the type of UPS being used in Rourkela Steel Plant . We went to the Communication Engineering department(CED) of RSP and visited their telephone exchange centre. We learnt about the outlay of the telephone lines plan with several gateways and their optical fibre connectivity.We also learnt about the specifications of online UPS viz. the type of UPS being used in RSP . We got to know about the problems they were facing through and tried to resolve them as well .

PS-I experience: The PS-1 experience was quite good and productive . It was my first encounter with the industrial world and so tried my level best to prove my worth.

Learning outcome : I learnt the basic structure,functioning,specifications of a UPS system and it's extreme importance in an integrated plant like RSP.

PS-I is an exposure oriented course : Yes, i agree with the statement and feel that the exposure gained through it would be helpful for our future endeavours.

Name: ANNANAY Sharma (F2017B1A21761H)

Student Write-up

Short Summary of work done : I ANNANAY SHARMA from civil department worked on the project Water logging and waste water management alonge with three other members under the suprivision on Mr. Ujwal Behera who guided us alonge the way, but first we ought to know about ineer workings of the plant and civil dept. role so we visited every part of the plant and gained knowledge about the process, machines and infrastructure of the plant. After this it was time to get our hands dirty and get on field, we visited the Guradih Nallah alonge with Artificial nallah, their origin and end all ten outfalls carrying waste waste from within the plant, we went on a feild trip to the lagoon area which disperse the water into river Brahmani, north and south channels were visited. Later we learned about the monsoon preparation and discovered the areas were regular maintaince should not be neglected as this may lead to losses. Proper cleaning of nallahs is essential, a more interconnected sewer system can be developed so that i can handle accidents more efficiently also water can be reused in a better manner, we also came across another issue that eas the stingent smell due ro nallahs but surrounding the nallhs with certain types of trees or plants and covering the nallah with proper design may save us a bad breath, its was a great experience knowing the inner workings of the plant and plant's work culture as well as social culture. At the end we made a report of all the work we did and learned in ous PS.

PS-I experience: Its was a great experience, a different aspect of learning was experienced through working on the field and know aboit the working of the industry, everyone was very helpful and the magic of team work made this journey wonderful and intractive, we learned a lot.

Learning outcome : Role of civil department and water logging and water management was our main learning outcome, water supply,reused water,outfalls and dispersion of waste water into nallahs and then its treatment by natural way in the logoon area, maintainance of the infrastructure and nallahs.

PS-I is an exposure oriented course : In hand experience is very important and the field work done in PS-1 Is a great learning outcome, getting out in the real world and working gave us a sight to what type of work we will be doing after our college and how to do it, it is really helpful to you.

Name: Aditya Gayatri Sastry Kaipa (2017B2A41748H)

Student Write-up

Short Summary of work done : Project Allotted: FANUC, Development of a Training Module.
Number of students involved: 4.
As part of the project we were asked to prepare an instruction manual for the employees (trainees/entry level operators etc) at the Mechanical Shop in RSP.
The aim of the project was to provide an easy to read accessible manual for the employees to quickly refer to. Not only as a reference, we were told that the manual we prepare must be such that by going through it, one must be able to operate the CNC lathe machine without much difficulty.
There are some manuals out there and the machines themselves come with the manufacturer's copy but all of those were too vague and were seen to deviate from the plant's requirements. Another point of was that though the manuals had some basic information, when it came to specific operations and machine set-ups, the manuals weren't of much help. That is where our project stepped in. We learnt the software (FANUC) with the help of our supervisor. We were shown the concepts practically on their machines.
We then recorded our observations and hence made a report comprising of our findings. Our report contains information about the programming involved in the machine, some essential operations (including illustrations and example codes). We hope this comes in handy to anyone who picks it up.

PS-I experience: From a learning point of view it was a great course. We got to learn about several departments and manufacturing plants within RSP.
We also had the opportunity to interact with several employees at RSP (from executives to contract employees, understanding their point of view about the industry as well as their jobs etc.

Learning outcome : Through our project, we understood manufacturing softwares like FANUC and SIEMENS currently being used widely in the industry. And operating the systems that work on these softwares (CNC lathe machine).
As part of our orientation program we got to learn about several plants in RSP by their respective DGMs. After which we visited nearly 10 of the plants over the next two week to learn and understand the processes happening there.

PS-I is an exposure oriented course : That is true. We were exposed to real life experiences and situations in industries and ours being an industry that deals with manufacturing on such massive scales, it was even more intense.

PS-I station: Samvardhana Motherson Adsys Tech Ltd. , Noida

Student

Name: Sahil Kumar (2017B4AA0655G)

Student Write-up

Short Summary of work done : The whole team had been allotted with three projects and all the students worked on all three projects.
The two projects was all about preparing company databases which can give an overview of company's basic timeline, market status and policies.
21 companies were allotted to work on and were distributed among all the students, the project work majorly involved digging in company information through various platforms including LinkedIn, Bloomberg and company websites.
The third project was to prepare research documents of various defense equipment(a list had been provided), the basic information that should be included in the documents was introduction, timeline, specifications & technologies and current market status of any particular equipment. Various platforms like DRDO and IEEE papers are studied thoroughly to complete this project.

PS-I experience: In the very beginning, it felt like only google search and not of much use but as we participated in many of the company meetings and discussions, project works seemed to be very interesting and after that our participation in the project was more enthusiastic and hence it finally lead to a great learning experience. Also the company planned many little surprises on some days which also made the experience more pleasing.

Learning outcome : All the projects were majorly about market analysis and business development and as i participated in all the three projects, i got a decent exposure about how market works, and how all the organizations follow a particular system to do things. Moreover there was great enhancement in the knowledge about various big companies present in the current market.

PS-I is an exposure oriented course : PS-1 is a very good first exposure to the corporate world.

PS-I station: Schindler India Pvt. Ltd. , Pune

Student

Name: Aadarsh Mohta (2017A3PS0823P)

Student Write-up

Short Summary of work done : Schindler introduced the prototype of Scalable LDU Controller. For the large scale production of the controller certain documentations are to be made. My work involved preparing the necessary documentations for the large scale error proof assembly of the controller .

PS-I experience: The experience was great. The work culture was very good and helped me to explore the various sectors in the industry. Overall it was a good learning curve.

Learning outcome : Got to know how the industry functions on such a large scale and learnt about the necessary documentations required whenever a new product is introduced

PS-I is an exposure oriented course : This is true. During the course of the program I gained exposure to how the industry functions and various other aspects of an MNC

Name: Krutarth Lalit Saraswat (2017A4PS0248P)

Student Write-up

Short Summary of work done : I had prepared a Master BOM (Bill of Materials) for Brackets, Machine Support and Pit Set of an elevator which helped in time optimization and reduction of process time.

PS-I experience: It was a great overall experience. The experience helped me explore and develop interest in various industrial sectors. I was genuinely able to contribute to the well-being of the company and gain skills in exchange of it. The work environment was extremely friendly and promoted work as well as social culture.

Learning outcome : I was able to sharpen my work skills and develop my interest in the industrial sector. The experience helped me understand and implement time optimization.

PS-I is an exposure oriented course : Yes, it surely is an exposure oriented course.

PS-I station: Sesa Sterlite Ltd. (Vedanta Aluminium & Power) , Jharsuguda

Student

Name: Suraj R Rai (2017A4PS1458H)

Student Write-up

Short Summary of work done : I learned about each component of the thermal power plant in detail. Multiple site visits were organised to see the interiors of each and every component of the thermal power plant. It was a very good learning experience. Then a problem caused in the turbine was given to me to solve. This problem solving was my project. I was required to a lot of research regarding this problem . I managed to gather information on four things which could have caused this issue. In the end I was successful in solving the problem, thus ending my project. I was also able to understand the water system of the plant very well, which I think will be very helpful.

PS-I experience: I learned a lot about core mechanical and chemical industry. It was a very good exposure to see the things in the industry so closely. It was a fun thing to do.

Because such opportunities do not present themselves every time , so I tried to utilize it and learn.

Learning outcome : I learned really well about the core mechanical sector.

PS-I is an exposure oriented course : Yes, PS-1 is definitely a exposure oriented course.

PS-I station: South Central Railway , Secunderabad

Student

Name: Divye Prakash (2017A2PS1131H)

Student Write-up

Short Summary of work done : Week 1&2- we were scheduled at the Rail Nilayam Building and we got to learn about the railway bridges and it's maintenance like RUBs and ROBs. We also learnt about the bridge lines and bridge designing.
Week 3 &4- we were scheduled at Engineering Workshop Lallaguda where we learn about the Girder making and glued joints and fish plates.We also went to the Flash Butt welding workshop at Moula Ali and saw how two rails are joined.We also learnt about different types of weldings.
Week 5- we were at the CAO office where we learnt about Green Buildings and their construction.
Week6- we were at the Secunderabad Bhavan and went for a site visit to Secunderabad Railway station and saw the waste water treatment plant, we also had a site visit to Warangal Railway Station where we learnt about track signalling and track circuits.
Week 7- we were at the Hyderabad bhavan where we saw the bridge drawings and we also visited Kacheguda station and learnt about track joints. We also visited Bollaram to see the ballast cleaning machine.

PS-I experience: PS-1 has been an wonderful experience. I had a wonderful time learning about the different Civil engineering works in South Central Railways.The officials and the instructors have been very supportive so it was full of fun.

Learning outcome : Learnt about different types of bridges(ROBs and RUBs) and their construction techniques and how the maintenance is done. Also Learnt about different types of railway joints. Got to understand what Green Buildings are and how they are constructed. learnt about track joints and track circuits and also Learnt how the ballast is cleaned.

PS-I is an exposure oriented course : Definitely true.It helps in exploring our discipline in a better manner and we get to learn what actually the work is in the organizations.

PS-I station: South Eastern Coalfields Limited , Bilaspur

Student

Name: Vatsalya Anand (2017A2PS1579H)

Student Write-up

Short Summary of work done : South Eastern Coalfields Limited is a Mini Ratna company and a subsidiary of Coal India Limited. This company is engaged in coal mining activities in Chhattisgarh & MP. It has its subsidiary headquarter at Bilaspur. We visited assigned 23 departments at headquarter. This included visit to the Town Administration of Vasant Vihar and Indira Vihar also we got an insight into the planning, finance, marketing, civil and legal departments. In the last leg we visited prestigious Bagdeva Underground Mines to learn actual coal mining activities.

PS-I experience: The overall experience was very exciting and satisfying.This experience had been unique as we from different campuses, from different backgrounds assembling and staying for a longer period at a third location and interacting with corporate peoples. The stay, logistics and gesture of SECL had been comfortable. Since we are from an institute of excellence, we were accorded warm welcome and treated with care. As per curriculum we spent whole duration at corporate headquarter the experience would have been more enriching had we devoted 60-70% in fields.

Learning outcome : SECL has produced 157.35 million tonnes of coal in FY 2018-19 which is 26% of total production by CIL.The procurement of materials and services are done through its own e-procurement portal to maintain transparency and competitive bidding all internal systems are integrated through Coalnet which helps in integration of resources at far flung areas of MP and CG. This company is very progressive in acquiring and use of latest equipment and technologies across the world. The company has heaviest earth moving equipments like 42cu mtr Electric Shovels of P&H and Buchyrus. They have a fleet of 240 tonne CAT make dumpers.
Apart from coal mining activities the R&R policy is very robust which takes care of the project affected families.
The company is fulfilling its obligation and commitment towards the society through CSR activities. They have very sustainable imprints on the hearts of the peripheral masses.

PS-I is an exposure oriented course : The interns must have industry interface and corporate exposure. This is very much required to broaden up the vision and mission of we bitsian.

PS-I station: Southern Regional Office (NTCL) , Coimbatore

Student

Name: Ananyo Chattopadhyay (2017A3PS0564H)

Student Write-up

Short Summary of work done : I was assigned to work on optimizing power consumption in the Organization allotted to me. I learned about the various heavy machinery used for production of Bag Yarn. Being a Textile Industry, it is a very energy intensive sector. I was successful in providing proposals in the form of minutes that will help to keep power wastage in check and also improve the efficiency of machines on load end and increase productivity for the same or lesser production cost.

PS-I experience: I helped the organization in reducing their power consumption by 15-20%

Learning outcome : I learned about the importance of optimized usage of power resources and how wastage can increase expenditure and decrease the net profit earned. I was exposed to the seriousness of these issue, especially in a country which has possible energy scarcity.

PS-I is an exposure oriented course : Yes, PS-I is an excellent opportunity that helps us in applying our knowledge gained from the theoretical text book learning to real - world problems that we face today. It helps in expanding our view on how real industries work and the challenges it face

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PS-I station: Strides Chemicals Pvt. Ltd. , Mumbai

Student

Name: ADITYAVIKRAM PANDEY (2017B1A10044G)

Student Write-up

Short Summary of work done : At PS1 I had to calculate the efficiency of the boiler system in the utility department of the chemical plant. Followed by that I had to give the company suggestions on how to improve it. We started off with taking weekly averages of the net efficiency of the equipments allotted to us using the daily log books. Since there were variable factors the efficiency came out to be different over the weeks and we had to take an average for our conclusion. The efficiency calculated was close to the practical efficiency that our PS supervisor had mentioned to us earlier and hence it proved that the systems were in tune. However, with newer technologies in the market this effiency could be increased 15% and hence suggestions to do the same were provided which included equipment change and maintenance of current equipment.

PS-I experience: PS1 experience was very fruitful as it gave us industrial experience. It also made me understand the corporate structure of a company and how to work under someone as well as along with a group.

Learning outcome : Several things were imbibed which included team work, leadership, oratory skills, report writing, working under harsh conditions and the importance of safety in a plant.

PS-I is an exposure oriented course : PS1 has exposed the lot of us to a variety of environments which most of havent witnessed before. Getting first hand industrial visit and actually working in it has indeed been helpful in realizing a lot of practical issues.

PS-I station: Tata Auto Comp Composite Division , Pune

Student

Name: Shashank Shekhar Mani (2017A4PS0874H)

Student Write-up

Short Summary of work done : I was allotted 2 projects. One involved around the concept of 5S, which plays an extremely important role in the working and efficiency of any institution. We had to conduct an observational survey in the plant and then suggest various means on how the efficiency and productivity of the company can be enhanced.for example we can save the travelling time of any component by keeping the dispatch area near the manufacturing area.
The other project was related to how the weight and placement of the raw material in the molding cavity affects the number and location of the defects produced. This had to do with collecting lots of data and then suggesting the means to correct it. This also varied from operator to operator as everyone has their own way of putting the raw material.

PS-I experience: My PS-1 experience was very good. The mentors and my instructor were very supportive throughout the course. The company orientation was also very good. The whole plant and every process was very well explained and the other employees were extremely helpful. All the evaluation components were well planned and carefully spaced and we were given time to adjust and get used to such a new experience. These components also helped us look into the details and learn everything in depth and get to know the in and out of the organization.

My other team mates were from the Pilani Campus and they too were very good and we made a great team. This experience also taught us great team management and communicating skills.

Learning outcome : Since my station was a manufacturing plant, I got to learn about various process starting from the moment when the raw material is brought in till the point when the product is dispatched. My plant was a molding plant where we had ^ large hydraulic presses. We learnt how these presses work and what all factors are taken into consideration while putting the raw material into the mold. We also studied various concepts on Plant Layout, Equipment maintenance, quality control etc. All in all it was an extremely helpful experience.

PS-I is an exposure oriented course : Yes, PS-1 truly helped me understand the working of the company with such great ease. The timing of this course is really perfect as after 2nd year we have done almost all the basic courses of our respective fields and then coming straight to an organisation.

PS-I station: Tata Steel BSL Ltd. , Ghaziabad

Student

Name: Manul Gupta (2017B3A20861H)

Student Write-up

Short Summary of work done : Financial Analysis of the Performance of the Company for the last 4 Financial Years using data from Statutory Audited Balance Sheets, Statements of Profit and Loss, Statement of Cash Flow, Statement of Change in Equity, Detailed Progress Reports & Annual Reports.

PS-I experience: After the recent Acquisition of the Bhushan Steel by TATA Steel, through its Wholly owned Subsidiary Bamnipal Steel, it was very interesting to see the changes induced by the new Management. In the initial days, we were given an educational tour of the Plant premises. After that, we were allotted our respective Projects, Departments and Mentors based on our preferences and availability.

I was also joined with other Interns from different fields and universities.
The Senior officers at the Finance department were very helpful and experienced. We learnt a lot from them. They supported and guided us in our respective projects and cleared all our doubts. They shared their life and work experiences with us and offered valuable insights about Corporate Environment and Business Ethics.
The work environment of the department was very accommodating and relaxed.
Food, Transportation and Safety facilities in the Plant were satisfactorily apt.

Learning outcome : I was stationed at the Finance Department where I learnt about the Export, Import procedure, their protocols, contract clauses, relevant INCO terms etc. The officers at the Department taught me about the intricacies of drafting Letter of Credit & Bank Guarantee, the primary mode of Transaction in Global trade.
I also received a hands-on training on Cash Management System and Working Capital Management used extensively in the Department.
During the course of my 8 Weeks Internship, I also learnt and analysed the crucial factors and chain of events that led to the Corporate Insolvency Resolution Process of the Company initiated by the Committee of Creditors (led by SBI) in the National Company Law Tribunal, under the Insolvency and Bankruptcy Code.
In my project, I learnt about about how to analyse Financial Performance of a Company through Financial Ratios. I learnt to read and analyse the Statutory Audited Financial Statements and extract relevant data from them.
During our evaluation components, I learnt about drafting Reports, actively engaging in Group Discussions and Conducting Seminars.

PS-I is an exposure oriented course : Surely, this 8-Week long Summer Internship program gave me proper and apt exposure to how the a Corporate business functions. I learnt how to effectively interact and work with fellow interns and employees. I observed how productively employees manage the

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Name: SOUVIK ROY (2017A4PS0460P)

Student Write-up

Short Summary of work done : I was allotted Mr Cyril Anthony as my mentor who is from workshop department during my internship at TATA STEEL BSL, Sahibabad. My work is divided into three parts. Mechanical workshop is there in steel plant to repair different machine parts used in the process of steel manufacture like work rolls, intermediate rolls, crane wheels etc. The first part is observation of working of different machines at workshop. Starting with lathe I learned about the history of lathe machine

also about the working and types of operations that can be performed on lathe. After that I learned about different types of milling machine and about grinding machine and their importance in mechanical workshop in steel plant. The second part involve observation of different steel plant processes happening across the plant starting with pickling which is treating of hot rolled coil (that comes from steel plant in Angur, Orissa) with HCl to turn coil into rust free coil. The rolling where the thickness of the coil is reduced from 4 mm to 0.50 mm. Then ECL (Electrolytic Cleaning Line) where coil is treated with Unikleen 84 B at high temperature. After that annealing this is heat treatment process to get back desired mechanical properties. After that skin pass process where hardness and tensile strength of coil is increased and is given surface finish (Matt or Bright depending on the need) After that it is treated with rust preventive oil. And finally finishing which is about CTL and CRS process. The third part involves manufacturing and observation of coil wrapping machine in mechanical workshop where my task was to calculate the speed of coil and ring holding the wrapping bandage so that they can work simultaneously, and packing can be done

PS-I experience: My experience at TATA STEEL BSL was fantastic I learned about different processes in plant and about the importance of workshop in steel plant. I enjoyed the company of Mr Cyril Anthony and his team at mechanical workshop I got a real outing to a steel plant. The work environment was friendly and safe. A lot of emphasis was given towards safety and learning

Learning outcome : I being a student from mechanical engineering learned a lot during my internship at TATA STEEL BSL I learned about different processes required to convert hot rolled steel to finished product starting from pickling to skin pass. I learned about rolling which I got a gist of during my second year. I learned about different other processes happening at TATA STEEL BSL like hardening and tampering, colour coating line and many other processes. I also learned about different machines at the workshop. I used the knowledge of gears from the subject Kinematics and dynamics in building the coil wrapping machine at workshop.

PS-I is an exposure oriented course : yes PS 1 is an exposure oriented course where students get to face real life situations and problems happening in an industry. Students also get an opportunity to see real life machines and device. This helps them to relate whatever they have studied to r

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PS-I station: The Ramco Cements Ltd. , Jaggayapet

Student

Name: Chinmay Choukse (2017A8PS1925G)

Student Write-up

Short Summary of work done : My project was automation and optimization of packing plant to improve the accuracy of the packing process. The major aim and objective of my project are:
1)To do a systematic recording and in-depth analysis of existing ways of packing and propose ways to make bagging process accurate and more effective.
2)Study the Bag Counting System and propose ways to correct any existing flaws leading to inaccurate counting of bags.
3)Study the time taken in various steps of the packing and look for unnecessary and avoidable time delays leading to increasing productivity of the process.
4)To identify the potential problems which exist throughout the layout of the packing plant and propose ways to rectify them.
5)To propose more effective workers' training programs to train the workforce to make them aware of the working of the unit and not just teaching them the work.

PS-I experience: At first it took some time to adjust to the new environment but soon it become normal. Overall my PS station experience was very good and I took away a lot from it. The people were very nice in the society. My project was related to my branch so I learnt a great deal of things related to my field as well as basic knowledge of how the full process of a cement factory works.

Learning outcome : 1) Learnt and were exposed to few new software's related to my field like SCADA, RF- ID generator.
2)About the full process of how cement is made and how a factory of such a large scale is run.
3)Got practical knowledge related to my branch and understood how theory differs from the practicality of an Instrument or machine like the mechanism of a PNP photosensor.
4)Learnt about how electricity is supplied in such a big factory and what all machines are required.
5)Talked to highly qualified people and took advice and gained a lot of experience from them.

PS-I is an exposure oriented course : Yes, I feel if you get a PS or a project related to your field it is very helpful. PS1 is an exposure oriented course as for most of us it is the first time actually working and experiencing the outside world.

PS-I station: Transport Department, Govt. of West Bengal , Kolkata

Student

Name: Shibani (2017ABPS1385H)

Student Write-up

Short Summary of work done : Transport Department of West Bengal deals with the functioning of city buses scheduled for everyday purpose. The major aspects of WBTC are Intelligent Transport System, Bus maintenance and repair, traffic Management , Tyre retreading and depot management work. ITS creates an interface between the people and the control room. Through ITS bus tracking, revenue tracking is done. Pathadisha app is also a part of it. It helps a user to plan it's trip for travel by giving the bus routes according to your destination and pickup. Bus maintenance is major part and comprises of 5 types of maintenance work namely preventive, accident, breakdown, routine and modifications. There are electric buses used on road these days and also a continuation of trams. Finally there was a workshop practice showing us the process of Tyre retreading and engine maintenance. We were sent to different locations starting from WBTC headquarters, Paribahan bhawan, Belghoria Depot, Paikpada Depot, Nonapukur depot and central workshop. This was planned and we spent around 6 to 10 days at each location.

PS-I experience: We learned how traffic is managed and tracked. How the vehicles are maintained. The people in the organization are very humble and helpful. We had a hands-on experience of automobile functions.

Learning outcome : We learned about tracking, ticketing machine, bus maintenance and Tyre retreading.

PS-I is an exposure oriented course : Yes true.

PS-I station: Vikram Cement Works , Neemuch

Student

Name: Tushar Upadhyay (2017A3PS0603H)

Student Write-up

Short Summary of work done : The title of my project is "study of VFD and it's applications in cement industry"
First week I studied the whole cement manufacturing process by visiting plant sites. Second week i devoted to study the use of electrical /electronics/instrumentation in cement plant. Induction motor and speed control of 3 phase induction motor was completed by third week. Remaining weeks were used to study about Variable frequency drives and it's application in cement plant.Apart from first few weeks, project was mostly study(research) oriented. Concepts of power electronics were used.

PS-I experience: It was a pleasant experience.The HR department was helpful and always available to solve problems. Mentor alloted was always availabe to provide help and feedback to my work despite his busy schedule.Safety was the most important criteria here, everyone had safety gear on themselves all the time when they were on sites. Everyone was disciplined and passionate towards their work which inspired us to do the same.

Learning outcome : My project was mostly study(research) oriented. Learnt about cement manufacturing process i.e. from crushing to packaging. Studied the use of electrical/electronics/instrumentation in cement manufacturing process like transistors ,sensors, acutuators, etc. Understanding of induction motor and it's speed control and how speed control is used in variable frequency drives.Apart from technical skills, soft skills like presentations ,Groups discussions and report writing pubic speaking were enhanced through regular evaluations.

PS-I is an exposure oriented course : My experience in PS-1 stands true to the above statement . PS-1 definitely is an exposure oriented course no doubt as it not only focused on project based learning but also helped me to gain some practical experience by visiting plant sites. It also helpe

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PS-I station: Vishakapatnam Steel Plant , Visakhapatnam

Student

Name: Surya Sidhartha. S (2017A7PS0200H)

Student Write-up

Short Summary of work done : We have developed a web application for analysis of production data using PHP, HTML5, JavaScript and WAMP server to host out application. Basic BootStrap templates were further developed by us and was made as our front end layout.
Only admin can add/remove the material details from the database through the application. After the user logs in, an interactive dashboard welcomes them with charts representing the latest production trends and future production quantity for various materials which are predicted using ML algorithm(Least Squared). Then he/she can view the past monthly production values of all the available materials and can download quarterly,monthly and yearly reports. A voice query module to find a particular monthly production quantity of any material in the past was included in our web application.

PS-I experience: It was good that I had learnt something which was completely new to me.

Learning outcome : I had familiarized myself with a couple of new programming languages which I wasn't much aware of and learnt and also learnt the importance of coordination to make work easier, we being a small team.

PS-I is an exposure oriented course : It is indeed aimed at industrial exposure to the students before they actually work in the industry. So you get the best experience when you choose the station which are related to your interested working domain.

Name: BHASKARA VENKATA RAMANA GARBHAM (2017AAPS0159G)

Student Write-up

Short Summary of work done : This project also helped me to know about Video surveillance system. I learnt about types of cameras, cables, storage, antennas, wireless protocols. I also learnt about advantages and disadvantages of Wireless surveillance system, challenges involved in designing and maintenance of it.

PS-I experience: This project also helped me to know about Video surveillance system. I learnt about types of cameras, cables, storage, antennas, wireless protocols. I also learnt about advantages and disadvantages of Wireless surveillance system, challenges involved in designing and maintenance of it.

Learning outcome : This project also helped me to know about Video surveillance system. I learnt about types of cameras, cables, storage, antennas, wireless protocols. I also learnt about advantages and disadvantages of Wireless surveillance system, challenges involved in designing and maintenance of it.

PS-I is an exposure oriented course : We had a lot if exposure and got industrial experience from it.

Name: Poornima Sumaja V (2017A1PS1118H)

Student Write-up

Short Summary of work done : We were alloted coke ovens and coal chemical plant. Firstly, we were given a tour of the plant to get an overview of it's functions. Then our team visited each plant to study the processes in depth. After visiting a few plants, we decided to work on a project at the mechanical biological chemical treatment plant. The plant treats the toxic chemicals in effluent water before releasing them into the sea. Our project was based degradation of phenols by activated sludge process using a particular strain of bacteria called pseudomonas putida. It was a wonderful, leaning experience that helped us understand how things differ on laboratory and an industrial levels.

PS-I experience: The coke ovens and coal chemical plant are a bit far inside the actual main gate of the plant and as any autos or personal vehicles aren't allowed, it was a quite a difficult task to reach our workplace but all in all, we learnt a lot of things at the plant.

Learning outcome : The experience helped me realize my interests in chemical engineering, mostly on the lines of energy within environmental borders. It also gave me a clear overview of how things work on an industrial scale, which is rather different compared to what we study.

PS-I is an exposure oriented course : Yes. I believe my answers to the above questions will suffice.

PS-I station: West Bengal Traffic Police , Kolkata

Student

Name: Tushar Damani (2017A1PS0725G)

Student Write-up

Short Summary of work done : Prepared a report on accident data analysis and suggesting remedial solutions for the same.For this purpose,authentic data was collected from different sources and charts and graphs were prepared from them.Then a thorough analysis of the data structures was done and possible solutions were suggested.

PS-I experience: It was a nice learning experience.I learnt to work in groups and various skills of mine were improved

Learning outcome : Traffic accidents occur distracted driving drunk and driving etc. I learnt about how accidents happen and brainstorm possible solutions for the same

PS-I is an exposure oriented course : Yes,it exposes us to a work place environment,teaches team management and helps us adjust for jobs in future .

PS-I station: Wheels India Ltd. , Chennai

Student

Name: AKSHAY JAIKANTH (2017ABPS1632H)

Student Write-up

Short Summary of work done : Evaluation of strength of disc and rim of wheel was done as it is necessary to design wheels that do not break under the forces that are expected to be applied. By using the modern technique of finite element analysis, this project aims to simulate the stresses on the wheel and plot the outcome graphically. Using the plots of e.g. stress the viewer can make an informed decision about the safety and reliability of the product. It was found that the stress on a wheel was concentrated at the bead seat and rim. Therefore, special consideration to this regions must be made when designing a wheel.

PS-I experience: PS-1 helped to understand how the company is organised and how the different departments of the company function in order to produce a quality product.In wheels India ,our project was allotted in the design R&D department and it was related to simulation.It helped us to understand the importance of simulation.
Simulation is used to help understand how these forces affect the wheel and cause failure.It helps in reducing the number of physical prototypes and experiments and optimizes the components in the design phase to develop products better and faster.

Learning outcome : -Evaluation of strength of disc and rim of wheel was done using finite element analysis
-An understanding about the different loading procedures and testing methods was developed
-The critical regions of the wheel was found out for the different loading using the ANSYS plots.

PS-I is an exposure oriented course : PS-1 helped in giving exposure to companies environment.It helped in understanding how an organization works and also helped in correlating the courses that we have studied to how they are applied in company.

Name: Eshan Bhaskar (2017B3AB1192P)

Student Write-up

Short Summary of work done : We were given an orientation of the R&D department. We learnt about material and product testing at one of the facility where I learnt how to operate machines to test product samples. They also showed us the process by which they conduct failure analysis and gave us a practical example of the same rigorous failure analysis. We were given a brief tour of shop floor and witnessed manufacturing line. At the electronics project, we learnt about micro controllers, soldering, and were allotted a project to sense temperature vial heat sensor using arduino uno board and automate a response from relevant machine.

PS-I experience: Ps-1 was interesting, we were able to gain real-life industry experience which provided me with perspective on how the industry works. I was able to orient myself to a working professionals life and relate concepts I had learned in college to the practical field. I was constantly helped by my mentors and guided along the path. A great experience overall.

Learning outcome : I was able to see a manufacturing line, learnt how a large manufacturing plant operates, learnt about product testing, material testing, soldering, micro controllers and had a fresher on arduino

PS-I is an exposure oriented course : Yes, I agree with the statement as it provides us with good understanding of what we've learned in our courses.

PS-I station: ZF Windpower , Coimbatore

Student

Name: K. Amrith (2017A4PS0480H)

Student Write-up

Short Summary of work done : I was given two projects and had to help in implementing one software in their system apart from it. ZF Windpower is a manufacturing unit for windmill gearboxes.The first project was regarding finding the correlation between vibration and bearing play. Play is a parameter of utmost importance while assembling tapered roller bearing. The second project was on stack up analysis of tolerances. I had to find the worst case clearance between gearbox components and lubrication tube so that under no circumstances the lubrication tube foul with other parts. While working on this I also actively helped in installation of the software cargolog by Mobitronics in their server. It is a software which interprets data from the hardware installed on the gearbox. The hardware is used to measure parameters like humidity, temperature, acceleration while shipping it to customer. This helps to identify any damage caused during shipping as it is also linked with GPS.

PS-I experience: It was a wonderful experience to work at ZFWPC. The shop floor has state of the art technology for all sectors from manufacturing to assembly till testing. it provided an opportunity to use the knowledge acquired as of know in the core subject as well as learn new concepts. It also gave an exposure to work place etiquettes.

Learning outcome : I can confidently say that PS1 will smoothen the transition of being in a workplace after being in a college for four years. It also provided an glimpse to the various sectors in mechanical in which I can pursue a career or higher studies.

PS-I is an exposure oriented course : It very aptly sums up PS1. It is a exposure to the industries out there where we can apply what we've studied. It also makes one realise that what we study in curriculum is not the entire breadth of the topic rather there is lot more to learn.
