Annual Report

MESA COUNCIL
(2017-2018)

K. J. Somaiya College of Engineering, Mumbai-77
(Autonomous College Affiliated to University of Mumbai)

Name of the Council: MESA
List of Members/Details of Committee- 2017-2018

Sr. No.	Name of the Faculty advisor/ in-charge	Department	Portfolio
1	Vilas G. Dhore	Mechanical	Faculty Adviser

Sr. No.	Name of Student	Department	Portfolio
1	Sejal Dhage	Mechanical	General Secretary
2	Ria Bhattacharjee	Mechanical	Treasurer
3	Rucha Bapat	Mechanical	Public Relations Officer
4	Atharva Iwarkar	Mechanical	Jt. Public Relations Officer
5	Varun Maru	Mechanical	Creative Head
6	Parth Gosalia	Mechanical	Jt. Creative Head
7	Saylee Ingole	Mechanical	Event Head
8	Huzefa Lightwala	Mechanical	Event Head
9	Avanti Kantute	Mechanical	Jt. Event Head
10	Umang Gala	Mechanical	Technical Head
11	Dhruv Patel	Mechanical	Jt. Technical Head
12	Rohith Kanjirappara	Mechanical	Industrial Visit Head
13	Rushil Thirani	Mechanical	Jt. Industrial Visit Head
14	Nidhi Mehta	Mechanical	Magazine Head
15	Raj Upadhyay	Mechanical	Web Admin Head
16	Punit Bhanushali	Mechanical	Internship Head

Photo of MESA Council - 2017-18

Details of events/activities held during academic year 2018-2019

Sr. No. of Event / Activity	Day/Date	Year	Month	Time	Venue	Description of Activity
1.	16th September	2017	September	11.00-4.00 pm	Mumbai	Industrial Visit at Terminal Technology Pvt. Ltd.
2.	6th and 7th October	2017	October	2 day	KJSCE	Abhiyantriki 2017: Three events were conducted by us , 1. CAR-O-BAAR 2. BRING IT DOWN 3. TRAGIC TRAJECTORY
3.	9th – 12th October	2017	October	5.15-7.00 pm	KJSCE	SolidWorks Workshop
4.	14th October	2017	October	10.00-12 pm	Mumbai	Industrial Visit at Imaginarium Pvt Ltd.
5.	20th January	2018	January	10.00-2.00 pm	Mumbai	Industrial Visit at Godrej Material Handling Division
6.	10th March	2018	March	10-3 pm	Dahanu	Industrial Visit at Reliance Thermal Power Station

Reports of event/activity

Sr. No. of Event / Activity	Day/Date	Year	Month	Time	Venue	Description of Activity
1	16th September	2017	September	--	Andheri Mumbai	**Industrail Visit** at Terminal Technology Pvt. Ltd.

Details of participation in the event/activity

No of students / faculty	COMP	ETRX	EXTC	IT	MECH	Total no of participants
FY						**30**
SY						
TY						
LY						
No of Faculty						**2**

Report of event/activity

MESA Council organized an IV to Terminal Technologies Pvt. Ltd. on 16th September 2017. With cooperation of Terminal Technologies an industrial visit for students was arranged on 16th September, 2017. The students were divided into two batches each of 15 students, 11:00 am batch assisted by Prof. Shivangi Thakkar and 2:30 am batch was assisted by Prof. Abhishek Bhaduria. Mr. Mayur Nerkar of Terminal Technologies guided us in our entire visit. It started with a presentation about the general overview of the company then they led us through the shop floor. Here we understood the process through which products go before they are dispatched by the factory. Ranjit Das Sir showed to us the types of raw materials used and explained to us the quality assurance software developed by the company. Surendra Patil Sir of Terminal Technologies gave us a brief overview of the wire cutting technology used in the factory. We were led through the processes of storage of raw material, inspection, data entry, data analysis, and pilot inspection for stamping operations, inspection of finished material, storage and dispatch of finished materials. In the end, there was another presentation and interactive session by Antaryami Giri Sir of Terminal Technologies where they explained the process of tool and new part development. Terminal Technologies had also kindly prepared snacks for all the students after the session. We took our leave at around 2:30 for morning batch and 3:30 for evening batch.

It was an informative, interesting and a successful visit. As students of Mechanical Engineering, we learned about molding and stamping operations, which are a part of Production Process syllabus. We express our thanks to the Principal and HOD Mech., who permitted us to go on the visit, the faculty members who accompanied us and the officials who explained the various departments

Sample Photographs of the Event/Activity

Sr. No. of Event / Activity	Day/Date	Year	Month	Time	Venue	Description of Activity
2.	6th and 7th October	2017	October	--	Mumbai	Abhiyantriki 2017: Three events were conducted by us , 1. CAR-O-BAAR 2. BRING IT DOWN 3. TRAGIC TRAJECTORY

Details of participation in the event/activity

No of students / faculty	COMP	ETRX	EXTC	IT	MECH	Total no of participants
FY						100
SY						
TY						
LY						

Report of event/activity

Next the most important and big thing on plate for all the technical councils was Abhiyantriki-the technical fest. It was conducted on 6th and 7th October. MESA council being a technical council had to present some events, which were technical as well as fun. After lots of discussion among council members, MESA presented three events viz. CAR-O-BAAR, BRING IT DOWN, TRAGIC TRAJECTORY. Let's see what these events were:-

- **CAR-O-BAAR**

Car-O-Baar was the biggest MESA event of Abhiyantriki 2017 with prizes worth 19k given out. The event had become a MESA favourite considering it had been repeated for last two year. Teams with four members from Car Teams of different colleges had participated in this event. It was divided into two rounds. First was the quiz round in which the 2 participant members had to take part in a written quiz and the rest two in a Oral Quiz. After that came the Business Plan Presentation round which was the most important round and was judged by Dr. Suhas Zambre, Mr. Ripal Doshi and Mr. Arbaz Reza, three individuals respected in their fields? They judged the BPP round and asked questions to the participants on which they were given points. The points were totalled in the end and the winners were announced.


Glimpse of Car-O-Bar event

- **BRING IT DOWN**

Bring It Down was a technical with fun event hosted by MESA. It took place on the second day of Abhiyantriki with prizes worth Rs.7000. In this event the participant had to build a catapult from the provided set of materials to knockdown a structure made up of plastic cups set at different distances. Depending on the Catapult's performance, the participants were graded. This even was enjoyed by a lot of people.

Photo of students participating in the event

- **TRAGIC TRAJECTORY.**

This was a fun plus technical type of event arranged by MESA in Abhiyantriki, it was the most successful event attracting about 200 participants.

It was a fun-tech event in which a team of 3 players were supposed to aim the ball across a wall on the opponent in such a way that the ball hits the opponent to eliminate him/her.

The game was hence a test of knowledge of trajectory and analyzing skills. The team which eliminated all the players of the opposite team was declared as the winner team. The registration amount for both the teams was Rs. 30 each and the winner team got double the registration amount. It was a no profit event.

The event took place on the second floor of B-Building in the open lobby on the second day of Abhiyantriki on 7th October 2017. The prizes were given to the winners.

Photo of students participating in gaming event

Sr. No. of Event / Activity	Day/Date	Year	Month	Time	Venue	Description of Activity
3.	9^{th} – 12^{th} October	2017	October		Mumbai	**SolidWorks** Workshop

Details of participation in the event/activity

No of students / faculty	COMP	ETRX	EXTC	IT	MECH	Total no of participants
FY						**50**
SY						
TY						
LY						
No of Faculty						**--**

Report of event/activity

MESA council conducted a SolidWorks Workshop for students completely free. More than 50 students participated in the workshop. The workshop took place from 9^{th} October to 12^{th} October after college hours from 5:15pm to 6:30pm. MESA council provided the students with the SolidWorks Software and taught them the basics. Mr. Prabodh and Ms. Nishi Bhemani and Mr. Nisarg Shukla were students, which helped MESA council members to conduct the workshop. The MESA council members along with teaching the basics of the software taught the students the part development and assembly of stuffing box. Sheets with part drawing, assembly drawing, advantages, and practical application of the stuffing box were provided to the students free of cost. Students were content by his workshop and told the council members to conduct workshops like these in the future.

Glimpse of students attending the solidWorks workshop

Sr. No. of Event / Activity	Day/Date	Year	Month	Time	Venue	Description of Activity
4.	14th October	2017	October		Mumbai	**Industrial Visit** at Imaginarium Pvt Ltd.

Details of participation in the event/activity

No of students / faculty	COMP	ETRX	EXTC	IT	MECH	Total no of participants
FY						**30**
SY						
TY						
LY						
No of Faculty						**1**

With cooperation of Imaginarium an industrial visit for students was arranged on 14th October, 2017. The students were divided into two batches each of 15 students, 10:00 am and 12:00pm batch both associated by Prof. B.M. Pradhan. Mr. Sumedh Habbu of Imaginarium guided us in our entire visit. It started with a presentation about 3D printing, its uses and a general overview of the company and then we were taken to the production floor. In the production floor, we were shown the different types of rapid prototyping techniques. SLA and SLS prototyping techniques, Digital light processing as well as CNC prototyping were shown. We were also educated about polyurethane and investment casting processes as well as injection and reaction injection moulding processes. We were led through the whole procedure of designing the model on various software, selection of the material and prototyping techniques, manufacturing of the product and the finishing operations. In the end, we were also shown some the product samples which were manufactured for different purposes such as sports, awards, medical etc. The visit ended at around 12.00 pm for morning batch and 2 pm for afternoon batch. It was very informative, interesting and a successful visit.

Photo of students with faculty at Imaginarium

Sr. No. of Event / Activity	Day/Date	Year	Month	Time	Venue	Description of Activity
5.	20th January	2018	January		Mumbai	**Industrial Visit** at Godrej Material Handling Division

Details of participation in the event/activity

No of students / faculty	COMP	ETRX	EXTC	IT	MECH	Total no of participants
FY						**40**
SY						
TY						
LY						
No of Faculty						**2**

With cooperation of Godrej an industrial visit for students was arranged on 20th January 2018. The students were divided into two batches each of 20 students each, 10:00 am and 1:00pm batch assisted by Prof Chitra Menon and Prof Shivangi Thakkar respectively.

We were given a brief introduction about the plant by Mr. Gurpeet Singh followed by a number of safety instructions given by the plant safety head Mr. Babaso Patil. Mr. Harish Dhuri, an engineer of the plant guided us in our entire visit. We first shown the various safety equipment used by the Godrej employees such as safety shoes, googles, helmet, gloves etc. We were then introduced to the various finishing machines such as turning machines, vertical machining centres and horizontal machining centres. Subsequently, the blast finishing process was illustrated. We then entered the main area where the assembly of various types of Forklifts was

explained. We were explicitly explained about the various parts of the forklift and their coherence. The visit then proceeded to the final part where we were shown the manufacturing of the chassis of the forklift trucks. The visit was concluded with Mr. Dhuri handing out his business card in case anyone wanted to apply for an internship. We finished our visit by d 12 pm for morning batch and 3 pm for afternoon batch.

Sr. No. of Event / Activity	Day/Date	Year	Month	Time	Venue	Description of Activity
6.	10th March	2018	March		Dahanu	**Industrial Visit** at Reliance Thermal Power Station

Details of participation in the event/activity

No of students / faculty	COMP	ETRX	EXTC	IT	MECH	Total no of participants
FY						**30**
SY						
TY						
LY						
No of Faculty						**2**

With cooperation of Reliance thermal power plant coordinator an industrial visit for students was arranged on 10 th March, 2018. Total 30 students of KJSCE were assisted by Prof. Vijay Shinde and Prof. Atul Saraf for the visit.

Introduction of the Plant:

Dahanu Thermal Power Station (DTPS) started its commercial operations in January 1996. As fuel, the plants use a mix of Indian washed coal and imported coal. The general blending ratio is 80: 20. The indigenous fuel is supplied from SECL (Korba) which is located about 1400 Km from the plant site. Imported coal is received from various countries like Indonesia, South Africa. The plant has a generation capacity of 500 MW and supply power to suburban Mumbai. The company claims that it supplies power at the cheapest tariff of Rs 2.45 per unit compared to other power utilities. The plant has got many awards for its distinctive features in terms of performance, technological innovation and sustainability. The plant is the first Power Company to be certified ISO 14001 for its environmental management system & ISO 9001for its quality management System.

Overview of the processes:

In a coal based power plant coal is transported from coal mines to the power plant by railway in wagons or in a merry-go-round system. Coal is unloaded from the wagons using wagon tippler units, to a moving underground conveyor belt. This coal from the mines is of no uniform size. So it is taken to the Crusher house and crushed to a size of 20mm. From the crusher house the coal is either stored in dead storage (generally 40 days coal supply) which serves as coal supply in case of coal supply bottleneck or to the live storage(8 hours coal supply) in the raw coal bunker in the boiler house. Raw coal from the raw coal bunker is supplied to the Coal Mills by a Raw Coal Feeder. The coal mill pulverizes the coal to 200 mesh size. The powdered coal from the coal mills is carried to the boiler in coal pipes by high pressure hot air. The pulverized coal air mixture is burnt in the boiler in the combustion zone. Generally in modern boilers tangential firing system is used i.e. the coal nozzles/ guns form tangent to a circle. The temperature in fire ball is of the order of 1300˚C. The boiler is a water tube boiler hanging from the top. Water is converted to steam in the boiler and steam is separated from water in the boiler Drum. The saturated steam from the boiler drum is taken to the Low Temperature Super heater, Platen Super heater and Final Super heater respectively for superheating. The superheated steam from the final super heater is taken to the High Pressure Steam Turbine (HPT). In the HPT the steam pressure is utilized to rotate the turbine and the resultant is rotational energy. From the HPT the out coming steam is taken to the Re-heater in the boiler to increase its temperature as the steam becomes wet at the HPT outlet. After reheating, this steam is taken to the Intermediate Pressure Turbine (IPT) and then to the Low Pressure Turbine (LPT). The outlet of the LPT is sent to the condenser for condensing back to water by a cooling water system. This condensed water is collected in the hot-well and is again sent to the boiler in a closed cycle. The rotational energy imparted to the turbine by high pressure steam is converted to electrical energy in the Generator

The Industrial Visit to the Reliance Thermal Power Plant, Dahanu was highly successful. We received insight of the whole plant right from the raw material (coal) procurement, processing, combustion and generation & transmission of electricity. The plant executive explained in detail description of equipment with their specifications and whole processes. There was a doubt solving session with control room in charge where the student's queries have been cleared. This kind of industrial exposure helped us to absorb the theoretical aspects of Thermal & Fluid Power Engineering more efficiently. We would highly appreciate more such visits in the future.