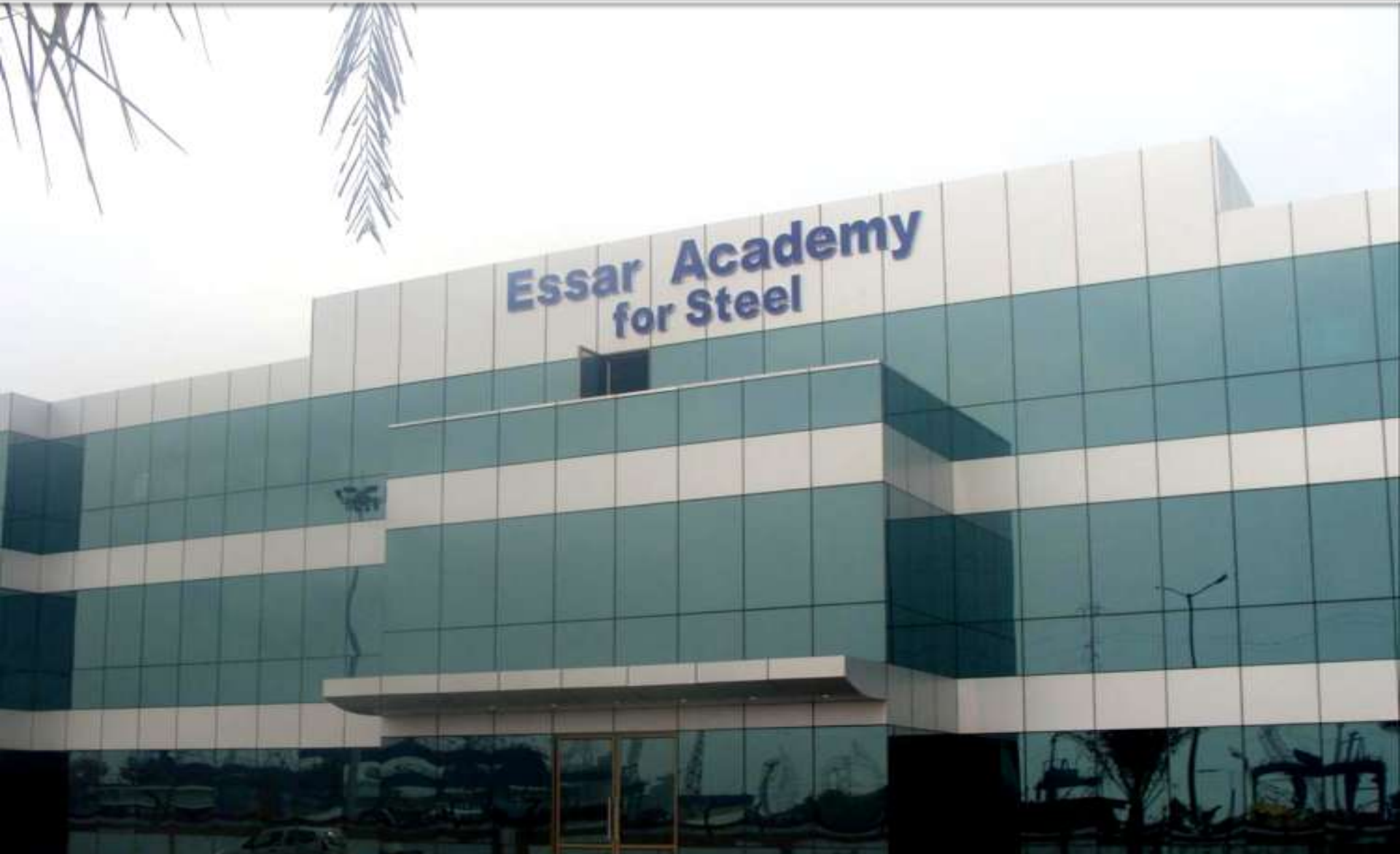


# ***Essar Academy for Steel***

2 years Fulltime Application Engineering Bridge Program  
(Residential program)



# Essar Academy For Steel



- Essar Academy for Steel offers a two year full time Technical training program for Diploma Engineer Trainees (DETs).
- It's comprehensive Skill based -application engineering course.
- It enable DET's to enhance their technical capabilities and develop expertise through classroom-cum-field experiences
- It is designed to create a unique cadre of technical talent related Steel manufacturing facilities.
- Enable the trainees to become application oriented technical expert through on-the-job exposures, demonstrations, field work and discussions



# Highlight of the Program



- Lectures on foundation engineering subjects
- Engineering Mathematics and Its Application
- Technical study projects and Plant projects
- Plant visit and study of plant process by Plant experts
- On the Job Training
- Specialized training session by OEM (Original equipment manufacturers)
- “The Essar Way” where a senior employee from plant deliver lecture on Essar working culture, values by sharing their experiences
- Interdisciplinary Engineering subjects coverage
- World class manufacturing practices
- SAP MM-PM module study
- Computer skill
- Communication Skill
- Behavioral and functional inputs
- Physical training

# On Campus – Selection Process



## Process :1

Selection and Recruitment of trainees through Campus.

### ➤ **Test : written test**

- ✓ Technical Test (30 mints.)
- ✓ Analytical Reasoning (20 mints.)
- ✓ Quantitative Aptitude (20 mints.)
- ✓ English Test (20 mints.)

### ➤ **Group discussion**

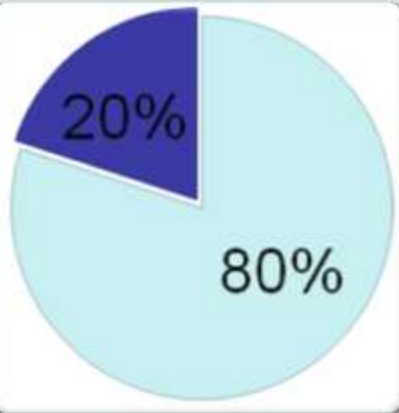
### ➤ **Interview by panel**

**Yearly Intake of Trainees**

Specialization	Intake
Mechanical	80
Electrical	50
Civil	30
Metallurgy	40
Total	200

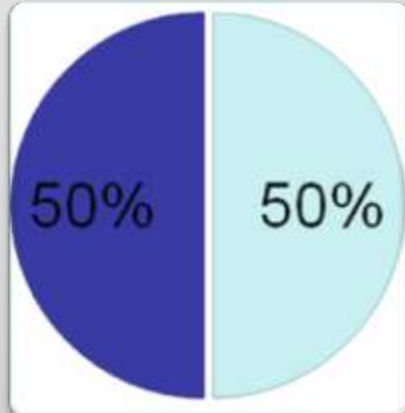
# Essar Academy Training Process

## Process : 2



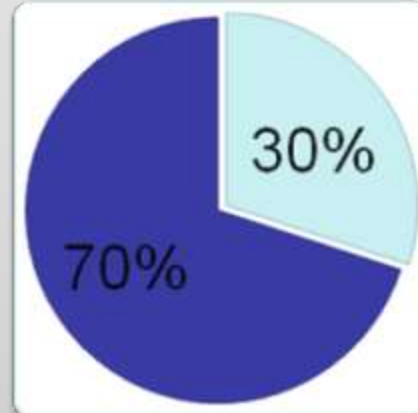
### Semester : I

20% →  
Plant Training  
80% →  
Classroom  
Training



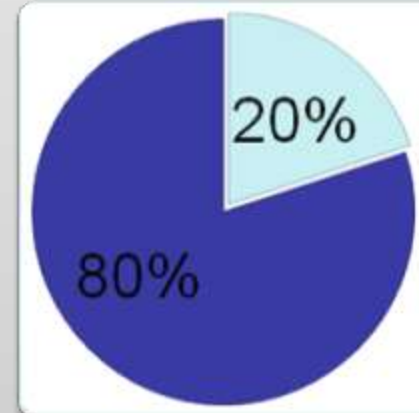
### Semester : II

50% →  
Plant Training  
50% →  
Classroom  
Training



### Semester : III

70% →  
Plant Training  
30% →  
Classroom  
Training



### Semester : IV

80% →  
Plant Training  
20% →  
Classroom  
Training

- Training is given as per areas of specialization
- Deployment to plant as per area of specialization
- Examination at end of each semester , 40 % passing marks, if fails trainees may get one more chance

# Certification Process



## Process : 3

- To Certify them as “**Essar Engineer**”, certificate will be awarded and absorb in steel business subject to successful completion of written test and certification test.
- Certification process to be done after semester IV with help of plant experts.

# Semester : I (6 Months)

Mechanical	Electrical	Metallurgy	Civil
Engineering Drawing	Electrical Systems	Material Science of Iron/Steel	Concrete Technology
Thermal/fluid Engg	Applied Electronics	Extractive Metallurgy	Engineering mechanics (beneficiation, agglomeration)
Mechanical Measurement	Measurements & Instrumentation		Fabrication Technology

- 1. Foundation Engineering**
- 2. Engineering Mathematics & its application + computer skill (project work) + English language** (project & Assignment)
- 3. Steel plant process:** Lectures (4 lectures/class x 5 classes=20 lectures-plant faculty + Academy Faculties)
- 4. Plant visit general** (to get an overall idea—2 days (half sessions 2 to 5 pm)  
Area of Plant Visit : MH,HBI,SMP,HSM,CRM,UTILITIES,HPL, HPML (Batch of 10-12 DETs)  
Nominated plant person for coordination
- 5. Weekly one presentation about “Essar culture/values”** ( -also include group presentation of Trainees about specific project work)
- 6. OEM –Original Equipment Manufacturer-** 1 seminar / month
- 7. Technical study projects**

# Semester : II (6 months)

Mechanical	Electrical	Metallurgy	Civil
Strength of Materials	Electrical Machines	Iron Making	Structural Analysis
Manufacturing Technology	Power Electronics	Application of Metal – Working, Metal Testing	Design of RCC Structure

1. **Foundation Engineering:**
2. **Engineering Maths + Computer skill + English language**
3. **Technical Plant Project**
4. To run **APPLICATION ENGINEERING** module
  - ✓ Modules For Mechanical Branch
  - ✓ Modules For Metallurgy Branch
  - ✓ Modules For Electrical / Automation Branch
  - ✓ Modules For Civil Branch



# Modules of Mechanical Branch



- Industrial Hydraulics
- Industrial Pneumatics
- Pumps and Compressor
- Condition Monitoring/Vibration Analysis
- Fabrication and Welding
- Crane Operation and Maintenance
- Gearbox Operation and Maintenance
- Equipment Erection and Alignment
- Pump Repair and Operation
- Bearings and lubrication
- CNC Machine Operation & Programming
- Mechanical Maintenance of Steel Rolling Mill Equipments.

# Modules of Metallurgy Branch



- MIDREX Process/HBI Operation
- Blast Furnace Operation and Practical Training
- Sinter Plant Operation/Practical Training
- COREX Operation and Practical Training
- Microstructure-Property Correlation
- EAF Operation and Practical Training
- LF Operation and Practical Training (RH,VD,VOD)
- Continuous Casting Operation and Practical Training
- HSM Operation and Practical Training
- CRM Operation and Practical Training
- CONARC Furnace Operation and Practical Training

# Modules of Electrical/Instrumentation Branch



- AC/DC drives
- PLC
- SCADA
- SERVO/Proportional Technology
- LEVEL II Automation
- Sensors-Transmitters-Instrumentation

# Modules of Civil Branch

- Primavera
- Project Management-MS project
- Pumps and Compressor
- STAAD pro and AutoCAD
- Industrial Hydraulic and Pneumatics
- CRANE Operation and Lifting Techniques
- Equipment Erection and Commissioning
- Civil Foundation and Civil Structure
- Structural Design
- Fabrication

# Area of Specialization

- To conduct TEST to identify the strength of trainees in different areas
- To divide total groups as per “**AREA OF SPECILISATION**”
- Line up their **plant training as per listed areas with help of plant coordinator**

# Plant Areas to impart skill based training



## Mechanical Engineering

- |                         |  |
|-------------------------|--|
| ➤ HSM FG BAY            | Cylinder repair, testing, roller assembly            |
| ➤ HSM ROLL SHOP         | Work roll assembly and roller grinding operation     |
| ➤ HSM MILL MAINT        | Shift maintenance activities                         |
| ➤ HYDRAULICS            | Hydraulic operation and maintenance                  |
| ➤ CGS                   | Steel mill equipment refurbishing job & assembly job |
| ➤ UTILITY               | Pump, compressor study                               |
| ➤ EAF MECH MAINT TEAM   | Hydraulic system study, equipment maint study        |
| ➤ CSP MILL MAINT        | Mill controls, erection and alignment of equipments  |
| ➤ PLATE MILL MAINT      | Plate mill operation study, equipment study          |
| ➤ CMD                   | repair job   |
| ➤ EQPT DESIGN ROCKWELL  | Equipment design concept and drawing analysis        |
| ➤ CRM HYDRAULIC         | Hydraulics operation and maintenance                 |
| ➤ CRANE MAINT TEAM      | Crane operation and maintenance                      |
| ➤ ROCKWELL MACHINE SHOP | Study of different types of machine operations       |
| ➤ MH CONVEYOR           | Conveyors operation and maintenance                  |
| ➤ MH CRANES             | Crane operation and maintenance                      |

# Plant Areas to impart skill based training



## Metallurgy Engineering

- **HSM FM PULPIT**                      Rolling mill controls, rolling parameters
- **CRM TANDEM PULPIT**              Cold rolling mill controls, operational parameters
- **GAL PULPIT**                              Galvanizing operation and control, product quality
- **EDF PULPIT**                              Steel making process controls and process parameters
- **CASTER PULPIT**                      Solidification process controls and process parameters
- **COREX PULPIT**                          COREX operational parameters
- **HBI CONTROL ROOM**              Midrex process and operational parameters
- **BF CONTROL ROOM**                  Batch annealing furnace operation and parameters
- **LF CONTROL ROOM**                  Secondary metallurgy-process parameters

# Plant Areas to impart skill based training



## Electrical Engineering

- |                           |  |
|---------------------------|--|
| ➤ HSM ELECT               | Drives control, level II automation                |
| ➤ HSM AUTOMATION TEAM     | Level ii automation                                |
| ➤ HSM MOTOR REPAIR        | Motor repair jobs                                  |
| ➤ CENTRAL REPAIR SHOP     | Motor repair and maintenance                       |
| ➤ CONARC ELECT TEAM       | Automation and control                             |
| ➤ HBI ELECT               | Electrical equipment maintenance , SCADA           |
| ➤ UTILITY ELECT           | Compressor, pump drive study                       |
| ➤ CSP MILL ELECTRICAL     | Study of Mill Controls, Drives, PLC and Automation |
| ➤ CRANE ELECTRICAL TEAM   | CRANE drives control, operation, maintenance       |
| ➤ Plate mill ELECTRICALS  | Drives control, PLC, electrical eqpt maintenance   |
| ➤ HSM INSTRUMENTATION LAB | All types of instruments study and repair          |



# Common MODULES for all branch:



- Maintenance management
- Steel making process study
- Steel rolling technology study
- Basic Managerial skill
- SAP training MM and PM module
- World class manufacturing Practices
- Factory laws
- Safety training

# Technical Session



**Topic :** Fabrication Technology and Heavy Engineering

**By:** Mr. Uday Krishnan  
VP  
Steel & MH Equip. EHES



**Topic :** Crain Operation and Maintenance

**By:** Mr. Mukesh Majithiya  
Senior Manager  
Hot Strip Mill, ESTL



**Topic :** Maintenance Practice in CRM

**By:** Mr. Subir Kumar  
JGM  
Cold Rolling Mill, ESTL

# Technical Session



**Topic :** The concept of HBI iron making/Reduction of iron ore  
**By:** Mr. Nainesh H. Dalal  
DGM  
HBI,ESTL

**Topic :** Mass Concreting for Dams and other structures. Calculation for 5000 cu. m concreting.  
**By:** Mr. Ajay Shah  
Senior Manager  
Project Coordination  
ESHL

**Topic :** Basic functions of Utility Department.  
**By:** Mr. Alkesh Mendpara,  
DGM  
Utility Dept., ESTL

# Essar Way



Col N Kannan-Chief-  
Administration (HAZ)



Mr. Subhajyoti Mukherjee  
Head Plant - A



Mr. Viren Patel ,Head  
–Maintainence, HPL



Mr Jigen Topiwala ,  
Senior Manager, HSM



Mr. Chandravadan P. Doshi  
Head Safety



Mr. Anil Jain  
Head HSE Department

# OEM Session



"Pump Fundamentals and Maintenance"  
by Grundfos Pumps  
India PVT Ltd.



"Gears, Gear box and  
Coupling" by ELECON,



"BEARINGS" by SKF  
India Ltd,



# PLANT VISIT



- **Advanced study for specialization subjects**
- **Plant project**
- **Basic managerial skill**
- **World class manufacturing practices**
- **Maintenance Management**
- **Detail study of Rolling mill equipments**

- **Deployment to Plant for JOB specific training**
- **SAP MM PM module training**
- **Project work**
- **Specialized training at Vendors Place**
- **Interdisciplinary Engineering**
- **Certification Process by Plant experts/plant heads**



# Seminar and Training



**AIDS Awareness Seminar**

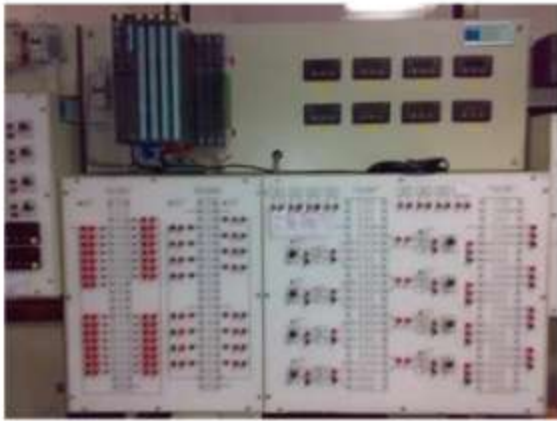


**Personal and Professional  
Effectiveness Program**

# Laboratory → AC DC DRIVE

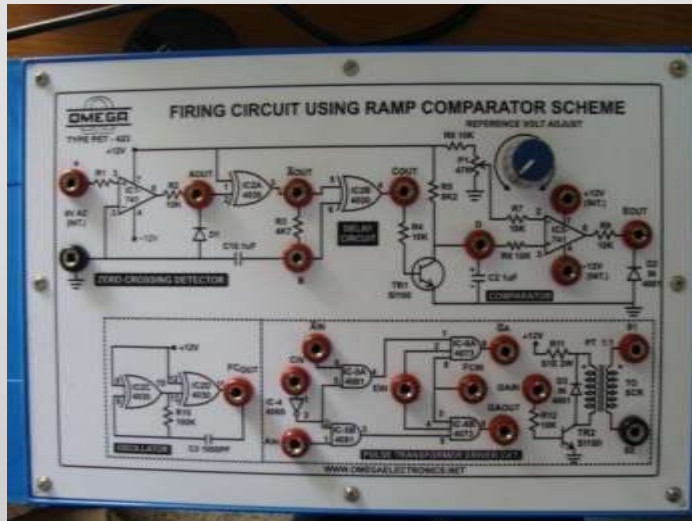


# Laboratory → PLC DRIVE





# Laboratory → ELECTRONICS



# Laboratory : INSTRUMENTATION



# Laboratory : HYDRAULICS





# Laboratory : COMPUTER



# Study Project Presentation





# Sports



Essar Interdepartmental Cricket Tournament



Basketball Tournament Under Swarnim Khel Mahakumbh



Table Tennis Tournament

# Health Awareness



# Extra Curricular Activities



# Evening activities at Academy



**6.30 pm to 8.30 pm**

- Debate Competition
- Technical Movie
- Motivational Movie
- Optimal Health Program
- Essay writing competition
- Chess competition
- Technical quiz
- Counseling with trainees
- Internet facilities



# Evening Activities



**Thanks**

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