Report

Industry Guest-Lecture
on
"Solar Projects, Future Technology, Growth & Opportunities"
Organised by
Department of Electrical & Electronics Engineering
Date: 17.09.2022

Organized in association with: **ISTE Student Chapter, IEEE student chapter & Institute Innovation Council**

Submitted by: Dr Pratap Ranjan Mohanty, Associate Professor., Dept. of EEE

Attendance: 175 participants (internal & external)

The programme is started at 11:00 PM with a welcome address to all the audience by the Dr. A V Pavan Kumar, H.O.D, EEE, MITS, Madanapalle. The resource person **Mr. Syed Hafeez**, **General Manager – Planning & Project Control** in **Sterling & Wilson Renewable Energy Limited (SWREL), Mumbai, INDIA** was introduced by Dr. Pratap Ranjan Mohanty, Assoc. Prof., Dept. of EEE.

The resource person started the session by extending his hearty thanks to the participants, organising members, HoD, Principal and Management of MITS Madanapalle for giving him opportunity to share his knowledge and experience in "Solar Projects, Future Technology, Growth & Opportunities".

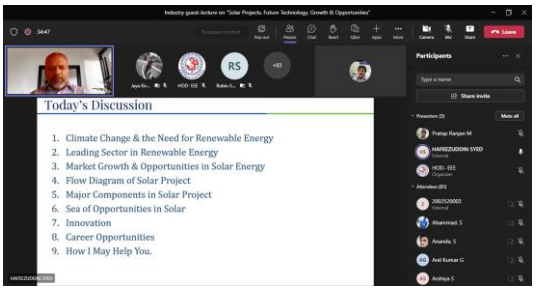
The eminent resource person highlighted the climate change and the need for renewable energy. Also, he focused on the leading sectors in the renewable energy. Besides, the growth in market and opportunities in the solar sector are being discussed during the session. The distinguished speaker discussed the solar projects through flow diagram. Also, the basic architecture of solar project is elaborated by the eminent resource speaker. During the session, the major opportunities are solar sector are being focused by the speaker. Besides, the prominent resource person pointed that there are huge number of opportunities for the engineering graduates in recent decades. Moreover, possibilities and innovations in solar sector are being highlighted during the session. At the end, the prominent speaker underlined the career opportunities for graduates. Also, speaker assured to help the participants/students for any kind of solar projects.

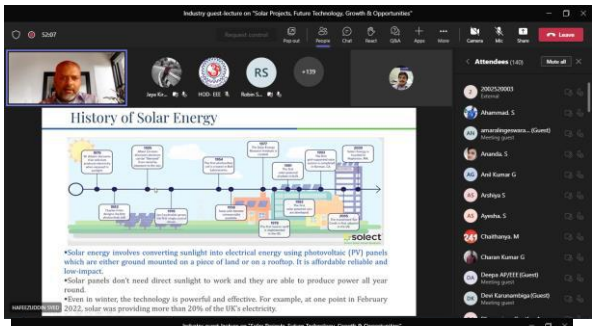
The session was concluded followed by a vote of thanks, given by Dr. P V Venkateswar Rao, Associate Professor, Department of CSE (ISTE Coordinator) MITS, Madanapalle.

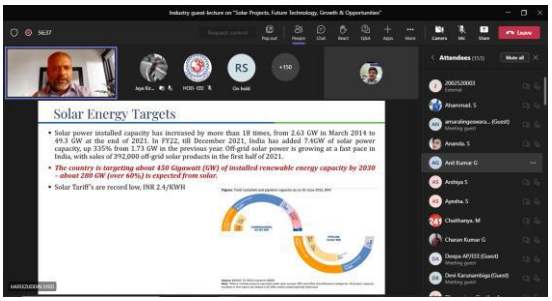
Feedback: The participants were moreover passionate to know the opportunities and scopes ahead in application, research and internship aspects of Solar Project.

Photos:

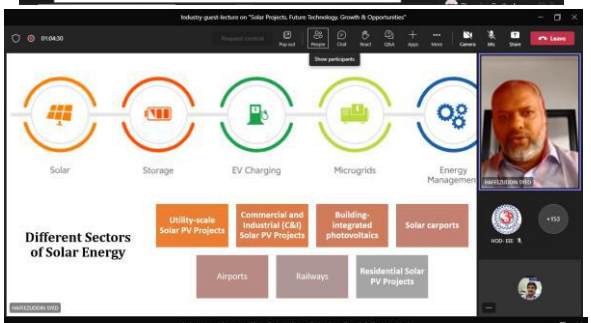

Industry Guest-Lecture (online)
"Solar Projects, Future Technology, Growth & Opportunities"
IEEE
Resource Person
Mr. Syed Hafeez,
17th September 2022
11 AM
Organized by Department of Electrical & Electronics Engineering
MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS INSTITUTION)
ESTD: 1998

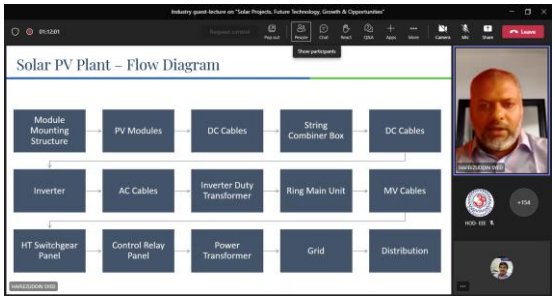

Today's Discussion
1. Climate Change & the Need for Renewable Energy
2. Leading Sector in Renewable Energy
3. Market Growth & Opportunities in Solar Energy
4. Flow Diagram of Solar Project
5. Major Components in Solar Project
6. Sea of Opportunities in Solar
7. Innovation
8. Career Opportunities
9. How I May Help You.

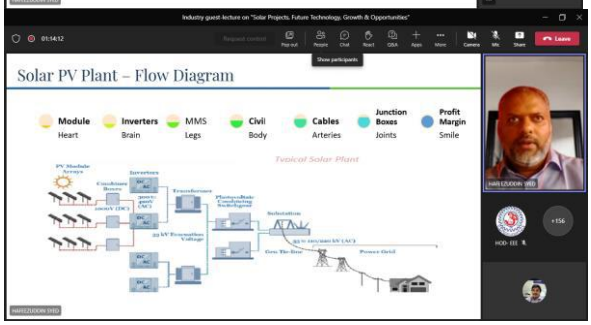

History of Solar Energy


Solar Energy Targets

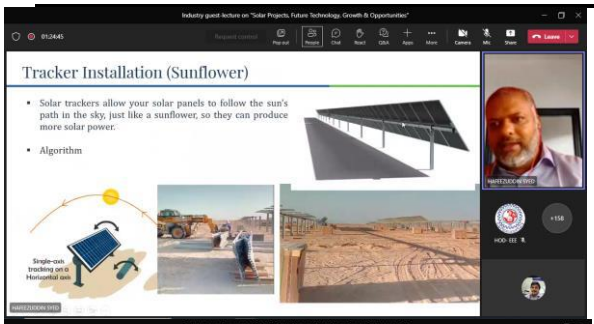

Jobs in Renewable Energy
World Total
11
million jobs

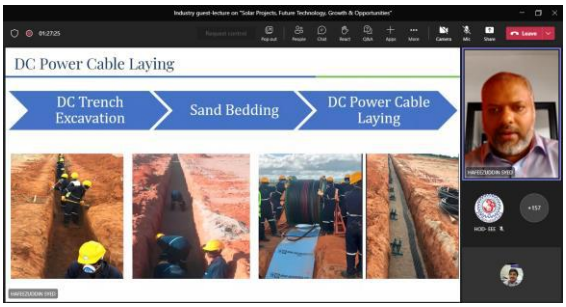

Solar
Storage
EV Charging
Microgrids
Energy Management
Different Sectors of Solar Energy
Utility-scale Solar PV Projects
Commercial and Industrial (C&I) Solar PV Projects
Building-integrated photovoltaics
Solar carports
Airports
Railways
Residential Solar PV Projects


Solar PV Plant – Flow Diagram
Module Mounting Structure
PV Modules
DC Cables
String Combiner Box
DC Cables
Inverter
AC Cables
Inverter Duty Transformer
Ring Main Unit
MV Cables
HT Switchgear Panel
Control Relay Panel
Power Transformer
Grid
Distribution


Solar PV Plant – Flow Diagram
Module
Heart
Inverters
Brain
MMS
Legs
Civil
Body
Cables
Arteries
Junction Boxes
Joints
Profit Margin
Smile

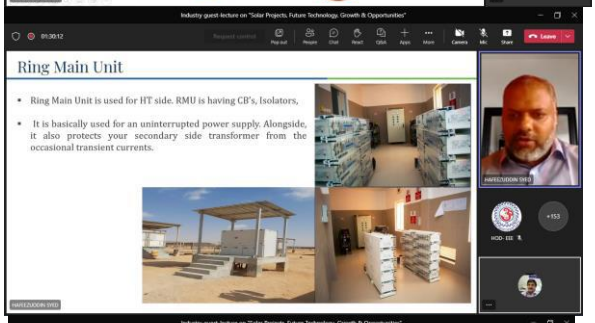

Sand to PV Module
Silicon Solar Cell Manufacturing Process

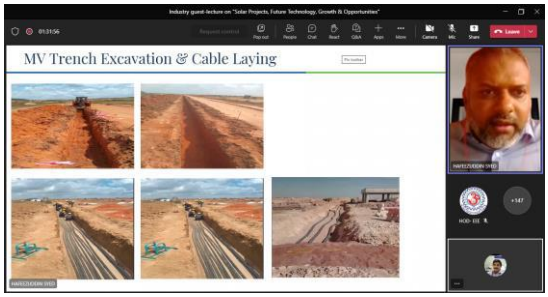

Tracker Installation (Sunflower)
Solar trackers allow your solar panels to follow the sun's path in the sky, just like a sunflower, so they can produce more solar power.
Algorithm

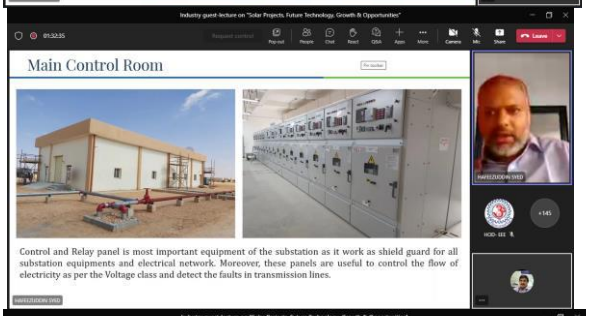

DC Power Cable Laying
DC Trench Excavation
Sand Bedding
DC Power Cable Laying

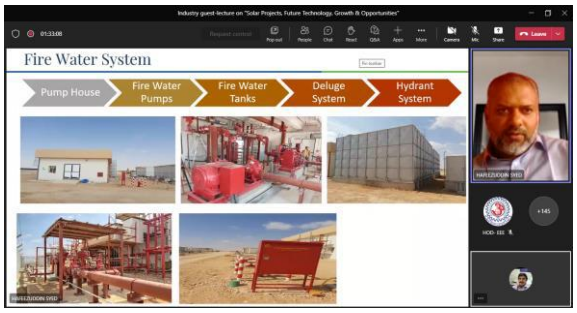

DC Cable Stringing
PV modules are arranged in strings and fields depending on the type of inverter used, the total power and the technical characteristics of the modules.

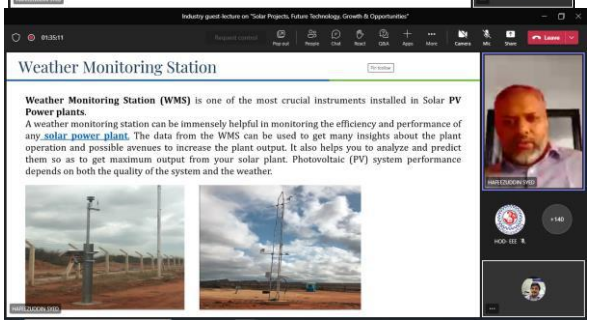

Inverter
The inverter is the heart of every PV plant: it converts direct current of the PV modules into grid-compliant alternating current and feeds this into the public grid. At the same time, it controls and monitors the entire plant. This way, it ensures on the one hand that the PV modules always operate at their radiation- and temperature-dependent maximum power. On the other, it continually monitors the power grid and is responsible for the adherence to various safety criteria.

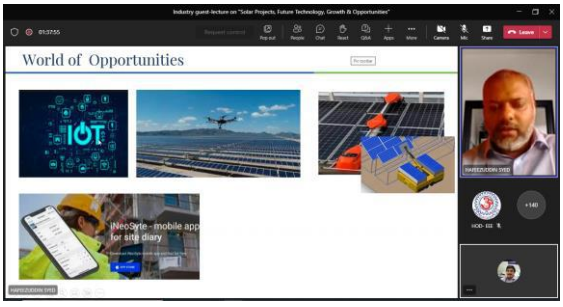

Ring Main Unit
Ring Main Unit is used for HT side. RMU is having CB's, Isolators,
It is basically used for an uninterrupted power supply. Alongside, it also protects your secondary side transformer from the occasional transient currents.


MV Trench Excavation & Cable Laying


Main Control Room
Control and Relay panel is most important equipment of the substation as it work as shield guard for all substation equipments and electrical network. Moreover, these panels are useful to control the flow of electricity as per the Voltage class and detect the faults in transmission lines.


Fire Water System
Pump House
Fire Water Pumps
Fire Water Tanks
Deluge System
Hydrant System


Weather Monitoring Station
Weather Monitoring Station (WMS) is one of the most crucial instruments installed in Solar PV Power plants.
A weather monitoring station can be immensely helpful in monitoring the efficiency and performance of any solar power plant. The data from the WMS can be used to get many insights about the plant operation and possible avenues to increase the plant output. It also helps you to analyze and predict them so as to get maximum output from your solar plant. Photovoltaic (PV) system performance depends on both the quality of the system and the weather.


World of Opportunities
IOT

Sample Certificate

MADANAPALLE INSTITUTE OF TECHNOLOGY AND SCIENCE
UGC - AUTONOMOUS
(Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi)

MITS/EEE/GUEST LECTURE/2022/1/77

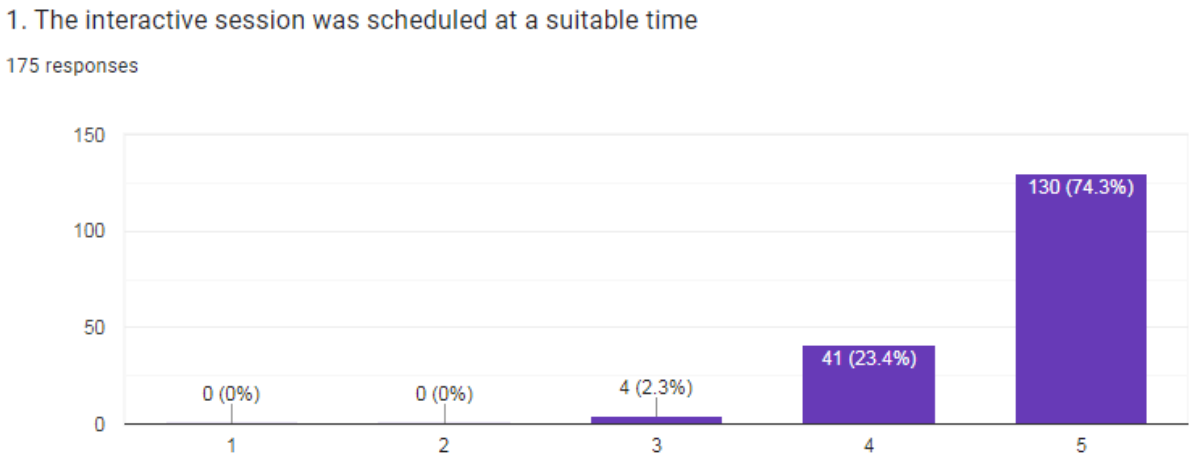
CERTIFICATE
OF PARTICIPATION
PROUDLY PRESENTED TO

This is to certify that Dr./Mr./Mrs. Theophilus A T Kambo Jr
of Kalinga Institute of Industrial Technology, Patia, Bhubaneswar, Odisha, India has attended an Industry Guest-Lecture on "**Solar Projects, Future Technology, Growth & Opportunities**" Organized by **Department of Electrical & Electronics Engineering**, in association with **IEEE, ISTE Students Chapter and IIC** at Madanapalle Institute of Technology and Science, Madanapalle on 17-09-2022.

Coordinator H.O.D EEE Principal

Feedback Analysis

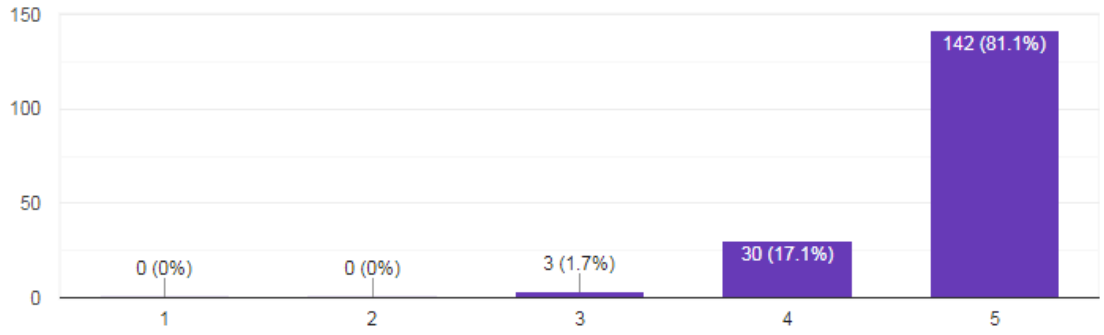
https://forms.gle/PsKDsMztRtdW9MZP6



2. The interaction was useful and resource person explanation.

Copy

175 responses



3. The information in the interaction was presented in a clear and organized manner.

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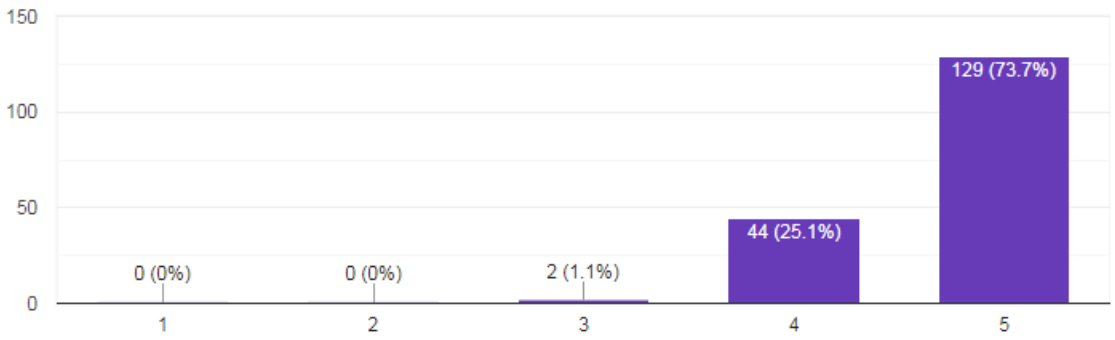
175 responses



4. The presenter responded to questions an informative, appropriate and satisfactory manner.

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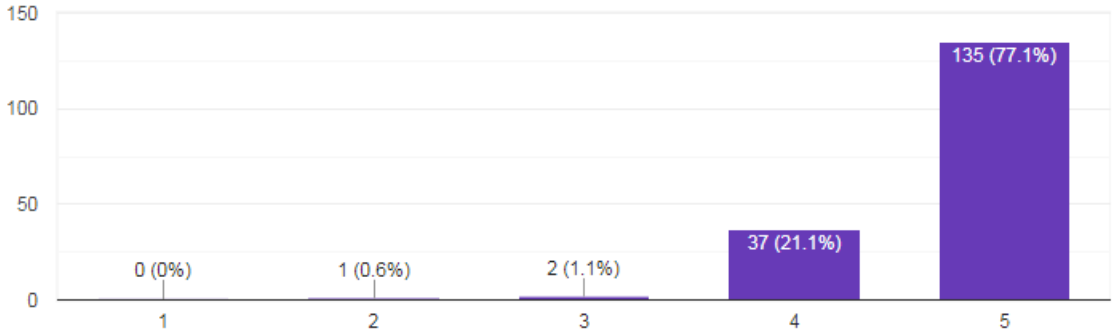
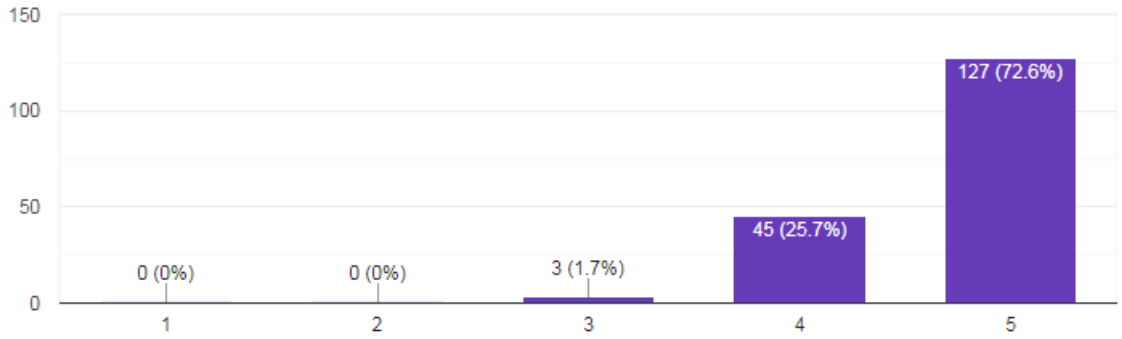
175 responses



5. your impression of facilities provided by the institute for interaction.

Copy

175 responses



6. Overall, the session was informative and valuable.

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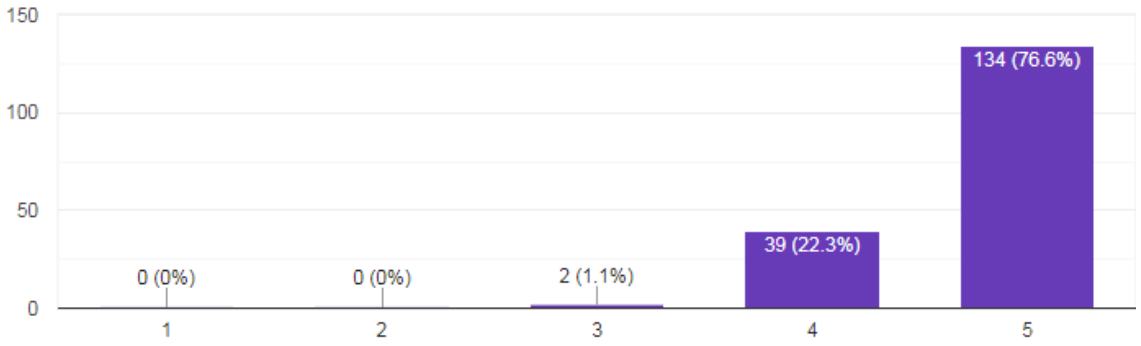
175 responses



7. In what ways could this interaction have been improved to better suit your needs?

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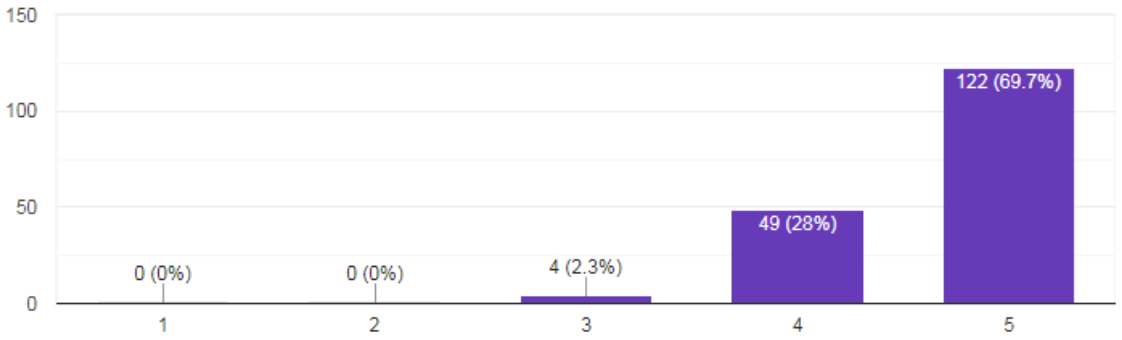
175 responses



Signature of the Coordinator

Signature of HoD, EEE