ADITYA ENGINEERING COLLEGE
An Autonomous Institution
Approved by AICTE • Permanently Affiliated to JNTUK • Accredited by NAAC with 'A' Grade
Recognised by UGC under sections 2(f) and 12(B) of UGC Act, 1956
Aditya Nagar, ADB Road, Surampalem - 533437, Near Kakinada, E.G.Dt., Ph:99498 76662

Best Practices

2021-22

Best Practice 1

Title: **Nation building through the preparation of students for industry readiness**

Objectives:

- o To foster the technical skills of students by imparting special training on various technologies.

- o To bring the confidence among the students in addition to technical training, emphasis is given on communication skills.

- o To make the students to aware the Interview process, conducting the Mock interviews

- o To make the students quintessence, Institute also support the students for their all-round development

- o The institute aims for fastidious development of students in the areas of academics, research, social service and management.

Context:

Scenario with insufficient supply to meet rising demand changes in how we see engineering practise and education are necessary in light of the exponential prospects and dynamic problems of the 21st century. Today's global industries require engineers with a wide range of knowledge and skill sets, including the ability to lead team-centered projects, contextualized problem formulation, proficiency in communicating across disciplines and hands-on experience.

The Practice:

The Institution is attentive to give training along with certification and educate the engineering students in the area of industrial requirement in different emerging areas like Software - stating from Programming to Automation through Operating systems, Networking, Database, Datamining, Web design, Software development, Android development, Cyber Security, Competitive Coding ; Industrial Automation - Robotics, Mechatronics, PLC Automation, Hardware - Automotive 4- Wheeler, 2- Wheeler, CNC, Refrigeration and Air Conditioning,

Welding, Electrical Home Appliances; Mechanical Software - CATIA, DELMIA and SIMULIA ; Civil Software - Auto CAD, Revit (Architecture& Structure). Even special focus given on soft skills so that they can be industry ready by enhancing their knowledge as well as skills.

Accordingly, the Institute has focused its efforts on educating future professionals in high-demand fields including:

Software Certifications/Trainings:

AWS Certified Cloud Practitioner & Architect Associate

Microsoft Azure Fundamentals, Administrator & AI Fundamentals Certification

CISCO Certified Network Associate, Cyber Security Operations Associate

CompTIA Certified Cyber Security Analyst, Security+

Google Cloud Certified Associate Cloud Engineer

Automation Anywhere Certified Essential and Advanced RPA Professional

Salesforce Certified Administrator

Red Hat Certified System Administrator & Engineer

Juniper Networks Certified JUNOS Associate

Oracle Cloud Infrastructure Certified Foundations Associate

Google Certified Associate Android Developer,

Microsoft IT Specialist Python and Java Certification

VMware Certified VSphere6 Administrator,

HubSpot Academy Digital Marketing Certification

Microsoft Technology Associate in Web Design, Software Development, Database Fundamentals, Network Fundamentals, Security Fundamentals, and Javascript

Unity Certified Programmer & Artist

Arduino Fundamentals Certification

Autodesk Certified User - AutoCAD, and Revit

Competitive Coding

Red Hat- System Administration RH124, RH 134, RH 254

Oracle Academy SQL and Database

DevOps Associate

MEAN and MERN Stack

Artificial Intelligence & Machine Learning

Internet of Things

Automation Testing

Augmented Reality / Virtual Reality

DELL EMA Academic Alliance - Cloud Infrastructure & Services (CIS)V2, Data Science & Big Data Analytics, Information Storage and Management V3 (ISMV3), Data Production & Management (DPM),

Siemens Solid Edge

Dassault CATIA, Delmia , Simulia

Robot Cprog

Hardware Certifications:

Applied Robot Control- Robots, Mechatronics & PLC Automation

Automotive 2 & 4-Wheeler

Computer Numeric Control (CNC)

Refrigeration and Air Conditioning

Industrial Welding and

Electrical Home & Industrial Appliances

Soft Skills/Life Skills/Career Guidance

Campus offers a platform both virtually and physically for the students to improve their language proficiency in a way that exposes them to global English and help them get rid of mother tongue influence. The learner centric approach provides students a free hand in learning.

Evidence of Success:

➢ Separate built-up area of 50,000 sq. feet is dedicated to especially to training and Certification along with Incubation centre.

➢ Special trained personnel with different Certifications made available at Technical-hub to train the students in addition to APSSDC labs under core Engineering.

➢ In addition to regular academic requirement, Training centre in association with APSSDC was also equipped with

- Automotive Engine & Vehicle Overhaul Kit
- Automotive 2 & 4 wheeler servicing Kit
- CNC turning & Milling - Smarturn SINUMERIK 828D
- Electrical Machine Trainer -DC to AC Motor generator Set
- DC compound and Shunt Generator 2.5 kW with Rectifier Unit 40 amps.
- Industrial Installation Trainer
- AC synchronous Motors & its Control Panels
- 84 high end P310 workstations
- BLUESTAR Cold room with 6000 BTU/hr,
- Scroll Chiller- Air Cooled based 10 T,
- Split, Ductable Split with 1.5T

- Window with 1T and
- VRF Outdoor Unit-19321.44 k Cal/hr
- ARC welding -Trans weld 400
- DC ARC welding rectifier set – RS400
- MIG welding- Magmatic 250 & Auto K400
- TIG welding – Easyweld SSR400-T-02
- Welding Simulator – SMAN/GTAW/GMAW
- Spot welding – 15kVA
- IGUS 4 Axis, Industrial Robots

➢ Further, students who participated in various trainings and mock interviews enhanced their technical skills and were hired in various jobs.

Training Details

	Core Training	Software Training	Soft Skills Training	Life Skills Training	Career Guidance	Language & Communication Skills Training	Social Service
2017-18	736	282	909	215	3645	298	2229
2018-19	521	810	944	210	3670	389	1949
2019-20	651	842	1006	218	3758	296	2398
2020-21	724	712	1185	255	2737	150	1872
2021-22	786	1437	1079	215	3705	335	2579

Placement Details

	2017-18	2018-19	2019-20	2020-21	2021-22
Employement Rate in India	47.8	46.8	44.1	43.1	42.3
AEC Placements	62.95	60.48	66.6	66.22	80.97
Average Package (LPA)	2.52	2.67	3.08	3.27	4.12
Highest Package(LPA)	4.12	7	17.4	11	20

Problems encountered and resources required

These activities involved considerable amount of time on planning and scheduling the programs. Faculty members devoted significant amount of time besides their regular academic load to train students. Though these activities are meant for all students, only the interested students used to come forward to participate in these activities. Through constant motivation

by proctors and publicizing the success of participants, more number of students has shown interest to participate.

Notes (Optional)

Table 1 Trainings

Description	2017-18	2018-19	2019-20	2020-21	2021-22
Core training	736	521	651	724	786
Software training	282	810	842	712	1437
Soft Skills	909	944	1006	1185	1079
Life Skills	215	210	218	255	215
Career Guidance	3645	3670	3758	2737	3705
Language & Communication Skills	298	389	296	150	335

Table 2 Placement details

Description	2017-18	2018-19	2019-20	2020-21	2021-22
EAPCET Rank	6819-138955	6560-131123	5193-130026	5297-127333	3374-133297
Employment Rate Indian Context	47.8	46.8	44.1	43.1	42.3
Placements (%)	62.95	60.48	66.6	66.22	80.97
Average Package (LPA)	2.52	2.67	3.08	3.27	4.12
Highest package (LPA)	4.12	7	17.4	11	20

Table 3 Social Service

Description	2017-18	2018-19	2019-20	2020-21	2021-22
Social Service	2229	1949	2398	1872	2579

Best Practice -2

Global Readiness in Ensuring Ecological Neutrality

Objectives:

1. Making the campus eco-friendly
2. Plantation of Trees
3. Development and make use of Renewable Energy
4. Preserving biodiversity

5. Enhancing energy usage through energy optimization
6. Educating students about the environment.
7. Students should be involved in environmental protection.

The Context:

The AEC in Surampalem is an expansive, verdant, and eco-friendly campus of higher education. The biggest problems in the world right now are climate change and declining water supplies. Carbon neutrality, renewable energy production and its utilisation, energy conservation, waste management, and plastic ban are just a few of the ongoing initiatives taken in the campus to protect and preserve our planet. The seriousness of the issue must be emphasised to the students. Students are taught to value the environment, which benefits the development of communities. Thanks to the eco-friendly facilities, students will learn that conserving Earth equals defending humanity. Sustainable practises have the potential to improve people's quality of life.

The Practice:

The following measures has been taken in college to donate to the great cause of environmental consciousness and sustainability.

Carbon Balance:

AEC has a 21,054 m^2 open space and garden area. Flowering plants, particularly trees, operate as a sound barrier and heat regulator in the garden based on their therapeutic value and relationship to Vedic philosophy. Horticulturist supervises the gardener. Organic pesticides and fertilisers are used on plants.

Efforts are being undertaken to decrease the campus's carbon footprint by adding plants and trees and minimising the vehicle usage.

Biodiversity

Animals such as turtles, fish, cranes, ducks, rabbits, cows, and buffaloes are accessible on campus to help support the needs of the ecosystem's biodiversity.

Renewable Energy:

In 2018, solar power production facility was erected with a capacity of 500 kW of electricity, more than enough to provide the college's requirements and enough to sell to the APEPDCL

Solar hot water systems with 12000 LPD capacity were built for the hostel buildings.

Energy Preservation:

Facilities for water conservation are spread out across the campus in order to collect rain water, and recycle waste water.

Campus is equipped with LED and Automated Street Lights

Only Electric vehicles allowed to be driven in the campus.

Energy Saving stickers are located at appropriate places
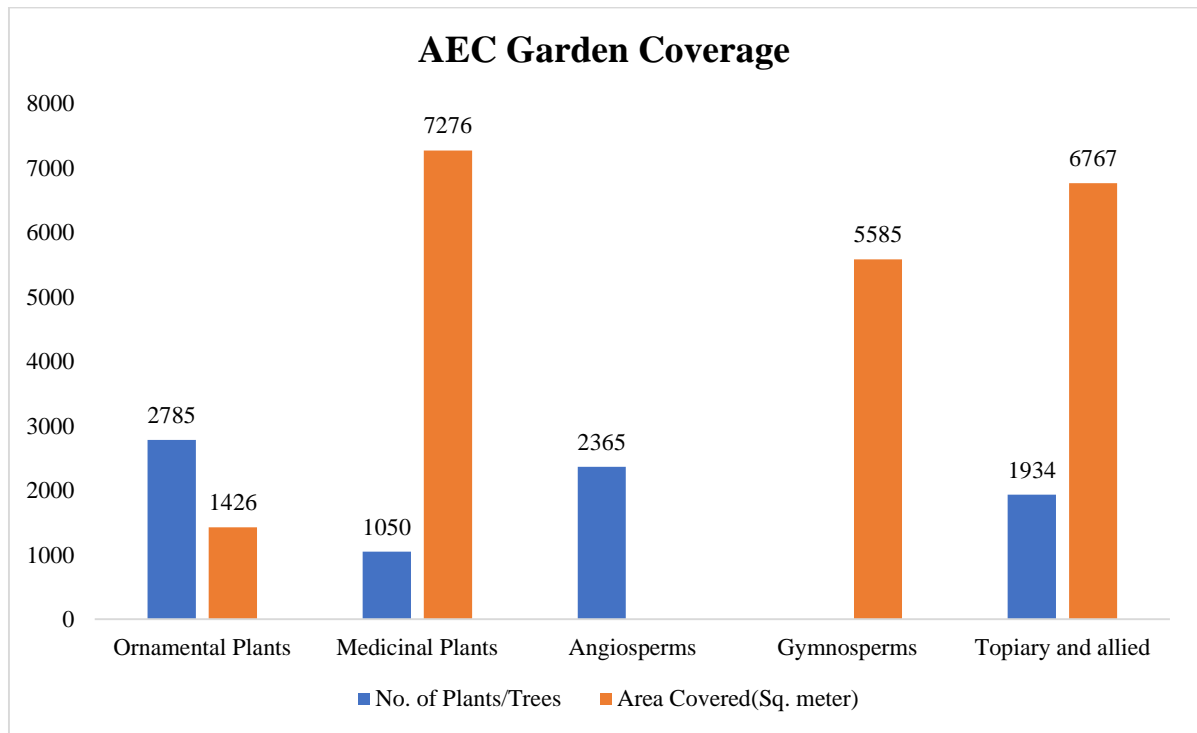
Waste Management:

The college has been working diligently to preserve the scientific status of its waste management in order to keep the campus in its current environmentally friendly state. AEC has developed a system to deal with the garbage that accumulates on campus. The key tenets of this system are to reuse, reduce, and recycle as much as possible.
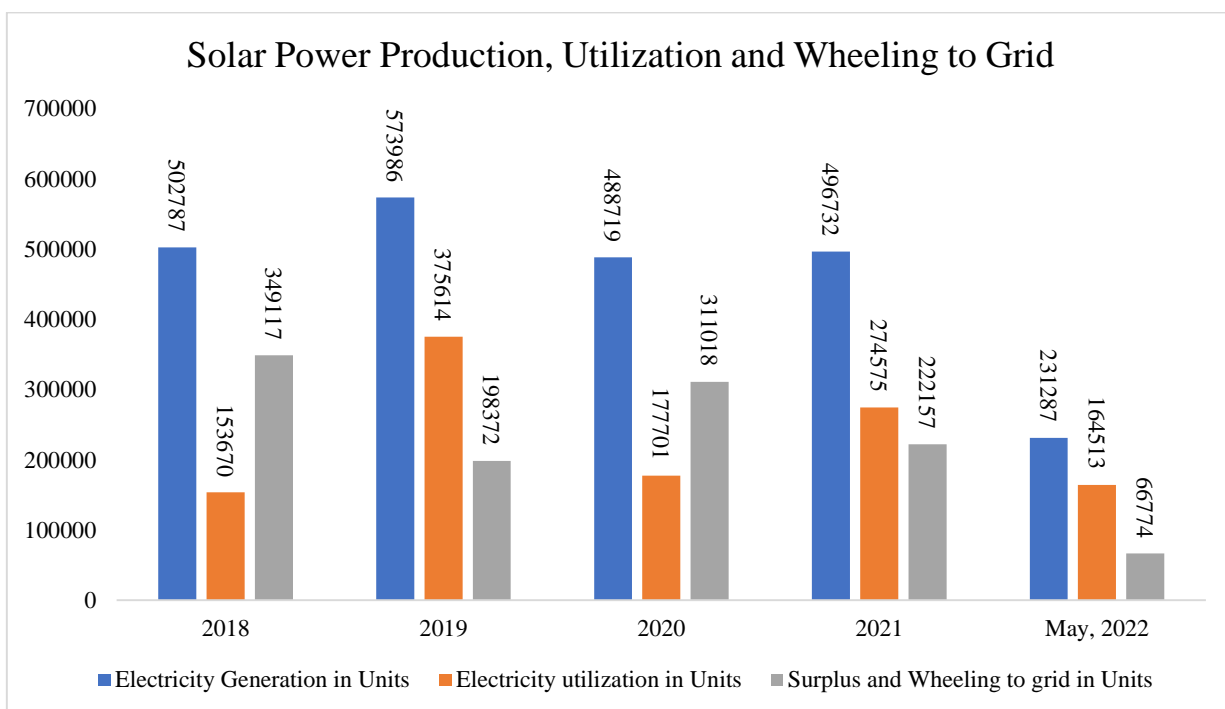
Ban of Plastic:

The primary emphasis is being placed on minimising and doing away with the use of plastic bottles, straws, and food packaging. In the college, everyone is encouraged to drink RO water rather drinking water from bottles.

Evidence of Success:

1. 37% of AEC is covered with open space and plantation area

2. Green buildings with natural draught

3. 8 tonnes of vermicompost and 4000 Litres of Jeevamrutham generated from college biomass in 40 days and used as organic plantation feed

4. On campus, three RO systems with a combined capacity of 6000 LPH. Waste water during this process is being used for gardening purpose

5. Ponds handle the 95000 KLD campus liquid wastes. Treated water irrigates all campus flora and grounds.

6. 11 harvesting pits, were strategically placed on campus

7. Open ponds with Aerators capture and store rainfall on campus

8. FRP Digested Food waste operated 4 m^3/day biogas plant was made accessible for biogas generating

9. The institute is recognized as "Cleanest Higher Educational Institute" in the country by MHRD with 3rd rank under Swachh Campus Rankings 2019

10. The institute is awarded with certificate of appreciation for notable involvement in "One Student One Tree" initiative of AICTE

11. Student project " Smart Irrigation System using Arduino & GSM Module" under Chhatra Vishwakarma Awards 2018 secured 1st Position in Innovative Solution under Empowerment of Villages through Technologies

12. Different Flora

AEC Garden Coverage

Category	No. of Plants/Trees	Area Covered (Sq. meter)
Ornamental Plants	2785	1426
Medicinal Plants	1050	7276
Angiosperms	2365	
Gymnosperms		5585
Topiary and allied	1934	6767

■ No. of Plants/Trees ■ Area Covered(Sq. meter)

13. Solar Power

Solar Power Production, Utilization and Wheeling to Grid

Year	Electricity Generation in Units	Electricity utilization in Units	Surplus and Wheeling to grid in Units
2018	502787	153670	349117
2019	573986	375614	198372
2020	488719	177701	311018
2021	496732	274575	222157
May, 2022	231287	164513	66774

Problems encountered and resources

When it comes to maintaining the quality and performance of green environment during the course of their development and implementation, the costs may quickly add up. However, there is a deficiency of skilled labour to oversee green campus initiatives and guarantee consistent high performance. Further, apathy about environmental concerns and sustainable development between students and the general population. In addition, the solar panels for the 500 kW Solar project took up almost 5000 square metres of space, thus keeping them clean at the right time and with the utmost care is a major challenge. Accomplishing the desired objectives in the designated region requires constant coaching and mentorship.

Notes (Optional)

Table 1 Diversity in Flora

Type of Tree	Plant or Tree names

Ornamental Plants	Cypress, Redduranta, Budda bamboo, Cazirina, Green duratha, Golden duranta, Golden duranta, Carpet lawn, Pisonia alba,Shampan palm, Creapers, Pundulnus
Medicinal Plants	Tulasi, Agara, Turmeric, Duttura, Betel leaf, Bur flower
Angiosperms	Indian oleander, Singapore ixora, Almonf, Hibisuc, Rose, Mini ixora, Pilemria puttiki, Catharanthus rose, Edinium, Mini nandhivagana, Porchuluca
Gymnosperm	Joycia Japanica
Topiary and allied	Arkeria,Royal palm, Foxtail palm, Mango, Neem, Red sandal wood, Teak, Traveller palm, Papaya, Areca palm.

Table 2 Flora coverage area

Description	No. of Plants/Trees	Area Covered(Sq. meter)
Ornamental Plants	2785	1426
Medicinal Plants	1050	7276
Angiosperms	2365	
Gymnosperms	-	5585
Topiary and allied	1934	6767

Table 3 Solar Energy

Year	Electricity Generation in Units	Electricity utilization in Units	Wheeling to Grid in Units
2018	502787	153670	349117
2019	573986	375614	198372
2020	488719	177701	311018
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