

SYLLABUS/
CURRICULUM



PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

(Approved by AICTE & Affiliated to Anna University, Chennai)

Madurai - Sivagangai Highway, Arasanoor, Thirumansolai Post, Sivagangai Dt. - 630 561, Tamilnadu
Mobile : 9842102628, 7373002628 Email: info@psyec.edu.in Website : www.psyec.edu.in

City Office : 10, Pandian Saraswathi St, Sivagami Nagar, Narayanapuram, Madurai - 625 014. Telefax- 0452 2682338, Mobile : 98423-02628

Department of Electrical And Electronics Engineering

Academic Year 2022-2023

VACEE2223EEEE- Electrical Estimation and Energy Auditing

OBJECTIVE OF THE COURSE

- Draw conventional symbols for various electrical installations.
- To quote the relevant IE rules for a given electrical installation, earthing and clearance of service lines.
- Familiarize the types of wiring.
- List the points to be considered for selection wiring.
- Determine the size of wire for internal wiring.

CHAPTER 1:

SYSTEMS OF INTERNAL WIRING AND EARTHING: Need of electrical symbols – List of symbols – Brief study of important Indian Electricity Rules 1956 - Methods of representation for wiring diagrams – Looping back system and Joint box system and tree system of wiring - Types of internal wiring – Service connection (Overhead and Underground) - Protection of electrical installation against overload, short circuit and earth fault – protection against electric shock – Effects of electric shock – Recommended first aid for electric shock - Treatment for electric shock - Construction and working of ELCB – Overview of Busbar Trunking and Cable tray.

CHAPTER 2:

DOMESTIC AND INDUSTRIAL ESTIMATE: General requirements of electrical installations for Residential, Commercial and Industrial – Lighting and power subcircuits – Diversity factor for sub circuits - Location of outlets, control switches, main board and distribution boards – Permissible voltage drops and size of wires - Steps to be followed in preparing electrical estimate. Estimate the quantity of material required in Electrical Installation for 1. Small residential building/Flat 2. Factory Lighting scheme 3. Computer centre having 10 computers, a/c unit, UPS, light and fan. 4. Street Light service having 12 lamp light fitting 5. Workshop with one number of 3 Φ , 15hp induction motor. 6. Small Workshop with 3 or 4 Machines.

CHAPTER 3:

ENERGY MANAGEMENT & AUDIT AND ELECTRICAL SYSTEM:

Energy Management & Audit: Definition, Energy audit- need, Types of energy audit, Energy management (audit) approach- Understanding energy costs, Bench marking, Energy performance, Matching energy use to requirement, Maximizing system efficiencies, Optimizing the input energy requirements, Fuel and energy substitution, Energy audit Instruments.

Electrical system: Electricity billing, Electrical load management and maximum demand control, Power factor improvement and its benefit, Selection and location of capacitors, Performance assessment of PF capacitors, Distribution and transformer losses.

CHAPTER 4:

ELECTRIC MOTORS & LIGHTING SYSTEM:

Electric motors Types: Losses in induction motors, Motor efficiency, Factors affecting motor performance, Rewinding and motor replacement issues, Energy saving opportunities with energy efficient motors.

Lighting System: Light source, Choice of lighting, Luminance requirements, and Energy conservation avenues.

CHAPTER 5:

DIESEL GENERATING SYSTEM: Factors affecting selection, Energy performance assessment of diesel conservation avenues.

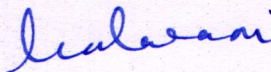
CHAPTER 6:

Energy Efficient Technologies in Electrical Systems: Maximum demand controllers, Automatic power factor controllers, Energy efficient motors, Soft starters with energy saver, Variable speed drives, Energy efficient transformers, Electronic ballast, Occupancy sensors, Energy efficient lighting controls, Energy saving potential of each technology.

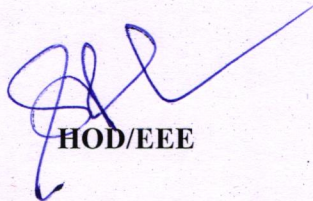
OUTCOMES

- Familiarize the types of wiring.
- List the points to be considered for selection wiring.
- Determine the size of wire for internal wiring.
- Explain the necessity and types of earthing.
- Estimate the quantity of materials required for earthing.

Total:35 hours



Course Coordinator



HOD/EEE



PRINCIPAL



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Department of Electrical And Electronics Engineering

Academic Year 2022-2023

VACEE2223EEEE- Electrical Estimation and Energy Auditing

Course Schedule

| Date | Time | TOPICS |
|------------|---------------------|---|
| 01/08/2022 | 9.00 am to 12.30 pm | SYSTEMS OF INTERNAL WIRING AND EARTHING: Need of electrical symbols – List of symbols – Brief study of important Indian Electricity Rules 1956 - Methods of representation for wiring diagrams – Looping back system and Joint box system and tree system of wiring - Types of internal wiring – Service connection (Overhead and Underground) - Protection of electrical installation against overload, short circuit and earth fault – protection against electric shock – Effects of electric shock – Recommended first aid for electric shock - Treatment for electric shock - Construction and working of ELCB – Overview of Busbar Trunking and Cable tray. |
| | 1.00 pm to 5.00 pm | |
| 02/08/2022 | 9.00 am to 12.30 pm | DOMESTIC AND INDUSTRIAL ESTIMATE: General requirements of electrical installations for Residential, Commercial and Industrial – Lighting and power subcircuits – Diversity factor for sub circuits - Location of outlets, control switches, main board and distribution boards – Permissible voltage drops and size of wires - Steps to be followed in preparing electrical estimate. Estimate the quantity of material required in Electrical Installation for 1. Small residential building/Flat 2. Factory Lighting scheme 3. Computer centre having 10 computers, a/c unit, UPS, light and fan. 4. Street Light service having 12 lamp light fitting 5. Workshop with one number of 3 Φ , 15hp induction motor. 6. Small Workshop with 3 or 4 Machines. |
| | 1.00 pm to 5.00 pm | |
| 03/08/2022 | 9.00 am to 12.30 pm | ENERGY MANAGEMENT & AUDIT AND ELECTRICAL SYSTEM: Energy Management & Audit: Definition, Energy audit- need, Types of energy audit, Energy management (audit) approach- Understanding energy costs, Bench marking, Energy performance, Matching energy use to requirement, Maximizing system efficiencies, Optimizing the input energy requirements, Fuel and energy substitution, Energy audit Instruments. Electrical system: Electricity billing, Electrical load management and maximum demand control, Power factor improvement and its benefit, Selection and location of capacitors, Performance assessment of PF capacitors, Distribution and transformer losses. |
| | 1.00 pm to 5.00 pm | |
| 04/08/2022 | 9.00 am to 12.30 pm | ELECTRIC MOTORS & LIGHTING SYSTEM: Electric motors Types: Losses in induction motors, Motor efficiency, Factors affecting motor performance, Rewinding and motor replacement issues, Energy saving opportunities with energy efficient motors. Lighting System: Light source, Choice of lighting, Luminance requirements, and Energy conservation avenues. |
| | 1.00 pm to 5.00 pm | |
| 05/08/2022 | 9.00 am to 12.30 pm | DIESEL GENERATING SYSTEM: Factors affecting selection, Energy performance assessment of diesel conservation avenues. |

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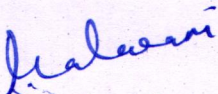
1.00 pm to
5.00 pm

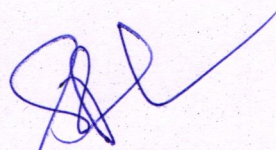
Energy Efficient Technologies in Electrical Systems: Maximum demand controllers, Automatic power factor controllers, Energy efficient motors, Soft starters with energy saver, Variable speed drives, Energy efficient transformers, Electronic ballast, Occupancy sensors, Energy efficient lighting controls, Energy saving potential of each technology.


Total Hours 35

Tea Break : 10:40 am to 10:55am & 02:45 pm to 15:00 pm

Lunch Break : 12:30pm to 01:00pm


Course Coordinator


HOD/EEE


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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Academic Year 2022 – 2023

One page Report

Name of the course : **Electrical Estimation And Energy Auditing**

Development Course Code : **VACEE2223EEEE**

Course Coordinator : Mrs.C.KalaRani

Date/Duration : 01.08.2022-5.08.2022 — **35 hours**

I here affirm that the Second-year students of strength 24 have been taught the value-added course title “**Electrical Estimation and Energy Auditing**” as per the syllabus and completed within the stipulated time duration.

I confirm that the value-added course titled “**Electrical Estimation and Energy Auditing**” has been conducted in the beginning of the semester and course delivery along with the attendance of the students was recorded.

I confirmed that all the students were actively participated in the course and the eligible students were certified for the course.

Mr s.C.KalaRani

AP/EEE

Course Co-Ordinator

Mrs.S.Pandimeena,

AP/EEE

Head of the Department

Dr.R.RAJA,

Principal

Dr. R. RAJA M.E., Ph.D.,
PRINCIPAL
PANDIAN SARASWATHI YADAV
ENGINEERING COLLEGE
Arasanoor, Thirumansolai P.O-630 56
Sivagangai Dist. Tamil Nadu

ASSESSMENT PROCEDURE



PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

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Department of Electrical And Electronics Engineering

Academic Year 2022-2023

VACEE2223EEEE- Electrical Estimation and Energy Auditing

Assessment Questions with Answer

1. Which type of cable is used for underground service connections?

- a. Low tension 3 $\frac{1}{4}$ core cable
- b. Low tension 3 $\frac{1}{2}$ core cable
- c. Low tension 2 $\frac{1}{4}$ core cable
- d. Low tension 2 $\frac{1}{2}$ core cable

Answer: b. Low tension 3 $\frac{1}{2}$ core cable

2. What is the formula to calculate the number of poles required in LT line distribution?

- a. Length / Span + 1
- b. Length / Span + 10
- c. Span / Length + 1
- d. Span / Length + 10

Answer: a. Length / Span + 1

3. What should be the height of the 'Roof Pole'?

- a. Less than 5m
- b. Less than 3m
- c. More than 3m
- d. More than 10m

Answer: b. Less than 3m

4) What is the multiplication factor used for the determination of maximum current carrying capacity of an 11 kV line?

- a. 0.88
- b. 0.95
- c. 0.9
- d. 0.8

Answer: c. 0.9

5) What should be the minimum clearance for laying power cables near communication lines?

- a. 0.2 m horizontally and vertically
- b. 0.6 m horizontally and vertically
- c. 1 m horizontally and vertically

d. 1.5 m horizontally and vertically

Answer: b. 0.6 m horizontally and vertically

6) Which test(s) is / are conducted after completion of erection of 11 kV line but before energisation of lines?

a. Conductor continuity tests

b. Earth resistance tests

c. Insulation resistance tests

d. Both (a) & (c)

e. All of these

Answer: e. All of these

7) What should be the minimum insulation resistance of a 11 kV line when tested with a 1000 v Megger?

a. 10 kV

b. 50 kV

c. 33 kV

d. 120 kV

Answer: b. 50 kV

8) What is the empirical formula employed for the determination of spacing of conductors in case of aluminium conductors?

a. $\sqrt{S + V / 100}$

b. $\sqrt{S + 120 / V}$

c. $\sqrt{S + V / 150}$

d. $\sqrt{S + V / 1 \text{ kV}}$

Answer: c. $\sqrt{S + V / 150}$

9) What is the angle between the pole and stay?

a. 30°

b. 45°

c. 60°

d. 10°

Answer: a. 30°

10) What should be the spacing between the two conductors if the working voltage is 11 kV?

a. 76 mm

b. 101 mm

c. 190 mm

d. 250 mm

Answer: b. 101 mm



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Department of Electrical And Electronics Engineering

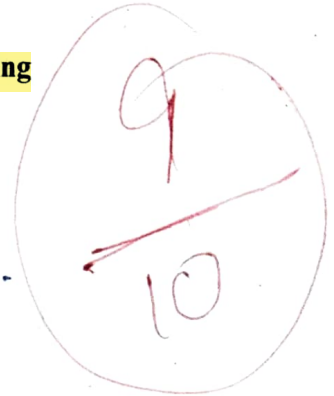
Academic Year 2022-2023

VACEE2223EEEE- Electrical Estimation and Energy Auditing

Assessment Test Paper

REGISTER NUMBER: 912021105605

NAME OF THE STUDENT: Aroekia sibi raja



1. Which type of cable is used for underground service connections?

- a. Low tension $3 \frac{1}{4}$ core cable
- b. Low tension $3 \frac{1}{2}$ core cable
- c. Low tension $2 \frac{1}{4}$ core cable
- d. Low tension $2 \frac{1}{2}$ core cable

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- a. Length / Span + 1
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- c. More than 3m
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- c. 0.9
- d. 0.8

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- c. 1 m horizontally and vertically
- d. 1.5 m horizontally and vertically

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- b. Earth resistance tests
- c. Insulation resistance tests
- d. Both (a) & (c)
- e. All of these

7) What should be the minimum insulation resistance of a 11 kV line when tested with a 1000 v Megger?

- a. 10 kV
- b. 50 kV
- c. 33 kV
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- a. $\sqrt{S + V / 100}$
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- d. $\sqrt{S + V / 1 \text{ kV}}$

9) What is the angle between the pole and stay?

- a. 30°
- b. 45°
- c. 60°
- d. 10°

10) What should be the spacing between the two conductors if the working voltage is 11 kV?

- a. 76 mm
- b. 101 mm
- c. 190 mm
- d. 250 mm

Pandian Saraswathi yadav Engineering College, Arasanoor -630561

Department of Electrical and Electronics Engineering
Student Performance Sheet

Academic Year : 2022-2023

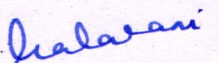
Course Code : VACEE2223EEEA

Course Name : Electrical Estimation and Energy Auditing

Duration of hours : 35

Period of Course : 01.08.2022-5.08.2022

| Assessment Marks | | | Marks |
|------------------|-----------------|-----------------------|-------|
| Sl. No | Register Number | Student Name | |
| 1 | 912021105001 | AJAIG | 95 |
| 2 | 912021105002 | ADITHYAN | 93 |
| 3 | 912021105003 | AKASH T | 85 |
| 4 | 912021105004 | ARCHANA BA | 84 |
| 5 | 912021105005 | AROCKIA SIBI RAJA | 90 |
| 6 | 912021105006 | CHANDRUK | 82 |
| 7 | 912021105008 | DHINESH B | 81 |
| 8 | 912021105009 | GOBINATH.K | 85 |
| 9 | 912021105010 | GOWTHAMANS | 86 |
| 10 | 912021105014 | MUTHU GOKUL.V | 87 |
| 11 | 912021105017 | RAM KUMAR.K | 88 |
| 12 | 912021105018 | SANJAY S | 70 |
| 13 | 912021105019 | SARUNATHI.K | 75 |
| 14 | 912021105021 | SIBI CHAKKARAVARTHI.V | 86 |
| 15 | 912021105022 | SOLAIMUTHU T | 88 |
| 16 | 912021105023 | SURYA PRAKASH S | 89 |
| 17 | 912021105024 | THANGAMUTHU S | 90 |
| 18 | 912021105025 | VAISHNAVI.K | 91 |
| 19 | 912021105026 | VARUN KUMAR NS | 92 |
| 20 | 912021105027 | VASANTHA KUMAR | 95 |
| 21 | 912021105029 | VIGNESH.N | 96 |
| 22 | 912021105030 | YOGESHWARIN | 97 |
| 23 | 912021105701 | VEERAMANITHASAN | 98 |
| 24 | 912021105702 | RAMAN.P. | 99 |


Course coordinator


PRINCIPAL



PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

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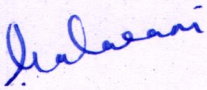
Academic Year 2022-2023

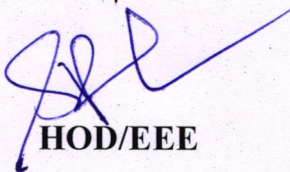
VACEE2223EEEE- Electrical Estimation and Energy Auditing

ASSESSMENT MODE

In order to get a certificate for this course, the students should satisfy the following constraints

Attendance : 75 %
Assessment Question : MCQ pattern
Assessment Mark : Greater than or equal to 50%


Course Coordinator


HOD/EEE


PRINCIPAL

STUDENTS ATTENDANCE

Student Attendance Sheet

Academic Year : 2022-2023

Course Code : VACEE2223EEEE

Course Name : Electrical Estimation and Energy Auditing

Duration of hours : 35

Period of Course : 01.08.2022-5.08.2022

| Attendance Sheet | | | Date: | | | | | |
|------------------|-----------------|-----------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|
| Sl. No | Register Number | Student Name | 09.00 am - 10.00 am | 10.00 am - 11.00 am | 11.15 am - 12.15pm | 01.00 pm - 02.00 pm | 02.00 pm - 03.00 pm | 03.15 pm - 04.15 pm |
| 1 | 912021105001 | AJAI G | Ajai | Ajai | Ajai | Ajai | Ajai | Ajai |
| 2 | 912021105002 | AJITH N | Ajith | Ajith | Ajith | Ajith | Ajith | Ajith |
| 3 | 912021105003 | AKASH T | Akash | Akash | Akash | Akash | Akash | Akash |
| 4 | 912021105004 | ARCCHANA B A | Archna | Archna | Archna | Archna | Archna | Archna |
| 5 | 912021105005 | AROCKIA SIBI RAJA X | Sibiraja | Sibiraja | Sibiraja | Sibiraja | Sibiraja | Sibiraja |
| 6 | 912021105006 | CHANDRU K | Chandru | Chandru | Chandru | Chandru | Chandru | Chandru |
| 7 | 912021105008 | DHINESH B | Dhinesh | Dhinesh | Dhinesh | Dhinesh | Dhinesh | Dhinesh |
| 8 | 912021105009 | GOBINATH K | Gobi | Gobi | Gobi | Gobi | Gobi | Gobi |
| 9 | 912021105010 | GOWTHAMAN S | Gowtham | Gowtham | Gowtham | Gowtham | Gowtham | Gowtham |
| 10 | 912021105014 | MUTHU GOKUL V | Muthu | Muthu | Muthu | Muthu | Muthu | Muthu |
| 11 | 912021105017 | RAM KUMAR K | Ram | Ram | Ram | Ram | Ram | Ram |
| 12 | 912021105018 | SANJAY S | Sanjay | Sanjay | Sanjay | Sanjay | Sanjay | Sanjay |
| 13 | 912021105019 | SARUMATHI K | Sarathi | Sarathi | Sarathi | Sarathi | Sarathi | Sarathi |
| 14 | 912021105021 | SIBI CHAKKARAVARTHY A | Sibi | Sibi | Sibi | Sibi | Sibi | Sibi |
| 15 | 912021105022 | SOLAIMUTHU T | Solai | Solai | Solai | Solai | Solai | Solai |
| 16 | 912021105023 | SURYA PRAKASH S | Surya | Surya | Surya | Surya | Surya | Surya |
| 17 | 912021105024 | THANGA MUTHU S | Thanga | Thanga | Thanga | Thanga | Thanga | Thanga |
| 18 | 912021105025 | VAISHNAVI K | Vaishu | Vaishu | Vaishu | Vaishu | Vaishu | Vaishu |
| 19 | 912021105026 | VARUNKUMAR MS | Vasanth | Vasanth | Vasanth | Vasanth | Vasanth | Vasanth |
| 20 | 912021105027 | VASANTHAKUMAR A | Vasanth | Vasanth | Vasanth | Vasanth | Vasanth | Vasanth |
| 21 | 912021105029 | VIGNESH M | Vignesh | Vignesh | Vignesh | Vignesh | Vignesh | Vignesh |
| 22 | 912021105030 | YOGESHWARI M | Yogesh | Yogesh | Yogesh | Yogesh | Yogesh | Yogesh |
| 23 | 912021105701 | VEERAMANITHASAN M | Veera | Veera | Veera | Veera | Veera | Veera |
| 24 | 912021105702 | RAMAN P | Raman | Raman | Raman | Raman | Raman | Raman |

Tea Break

Lunch Break

FN- 11:00 am to 11:15am & AN-03:00 pm to 03:15 pm

12:15 pm to 01:00pm

Kalasan
Course coordinator

[Signature]
HOD/EEE

[Signature]
PRINCIPAL

Student Attendance Sheet

Academic Year : 2022-2023

Course Code : VACEE2223EEEE

Course Name : Electrical Estimation and Energy Auditing

Duration of hours : 35

Period of Course : 01.08.2022-5.08.2022

| Attendance Sheet | | | Date: | | | | | |
|------------------|-----------------|-----------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|
| Sl. No | Register Number | Student Name | 09.00 am - 10.00 am | 10.00 am - 11.00 am | 11.15 am - 12.15pm | 01.00 pm - 02.00 pm | 02.00 pm - 03.00 pm | 03.15 pm - 04.15 pm |
| 1 | 912021105001 | AJAI G | Ajai | Ajai | Ajai | Ajai | Ajai | Ajai |
| 2 | 912021105002 | AJITH N | Ajith | Ajith | Ajith | Ajith | Ajith | Ajith |
| 3 | 912021105003 | AKASH T | Akash | Akash | Akash | Akash | Akash | Akash |
| 4 | 912021105004 | ARCCHANA B A | Archan | Archan | Archan | Archan | Archan | Archan |
| 5 | 912021105005 | AROCKIA SIBI RAJA X | Sibi | Sibi | Sibi | Sibi | Sibi | Sibi |
| 6 | 912021105006 | CHANDRU K | Chandru | Chandru | Chandru | Chandru | Chandru | Chandru |
| 7 | 912021105008 | DHINESH B | Dhinesh | Dhinesh | Dhinesh | Dhinesh | Dhinesh | Dhinesh |
| 8 | 912021105009 | GOBINATH K | Gobinath | Gobinath | Gobinath | Gobinath | Gobinath | Gobinath |
| 9 | 912021105010 | GOWTHAMAN S | Gowtham | Gowtham | Gowtham | Gowtham | Gowtham | Gowtham |
| 10 | 912021105014 | MUTHU GOKUL V | Muthu | Muthu | Muthu | Muthu | Muthu | Muthu |
| 11 | 912021105017 | RAM KUMAR K | Ram | Ram | Ram | Ram | Ram | Ram |
| 12 | 912021105018 | SANJAY S | Sanjay | Sanjay | Sanjay | Sanjay | Sanjay | Sanjay |
| 13 | 912021105019 | SARUMATHI K | Sarumathi | Sarumathi | Sarumathi | Sarumathi | Sarumathi | Sarumathi |
| 14 | 912021105021 | SIBI CHAKKARAVARTHY A | Sibi | Sibi | Sibi | Sibi | Sibi | Sibi |
| 15 | 912021105022 | SOLAIMUTHU T | Solaimuthu | Solaimuthu | Solaimuthu | Solaimuthu | Solaimuthu | Solaimuthu |
| 16 | 912021105023 | SURYA PRAKASH S | Surya | Surya | Surya | Surya | Surya | Surya |
| 17 | 912021105024 | THANGA MUTHU S | Thanga | Thanga | Thanga | Thanga | Thanga | Thanga |
| 18 | 912021105025 | VAISHNAVI K | Vaishnavi | Vaishnavi | Vaishnavi | Vaishnavi | Vaishnavi | Vaishnavi |
| 19 | 912021105026 | VARUNKUMAR MS | Varunkumar | Varunkumar | Varunkumar | Varunkumar | Varunkumar | Varunkumar |
| 20 | 912021105027 | VASANTHAKUMAR A | Vasanthakumar | Vasanthakumar | Vasanthakumar | Vasanthakumar | Vasanthakumar | Vasanthakumar |
| 21 | 912021105029 | VIGNESH M | Vignesh | Vignesh | Vignesh | Vignesh | Vignesh | Vignesh |
| 22 | 912021105030 | YOGESHWARI M | Yogeshwari | Yogeshwari | Yogeshwari | Yogeshwari | Yogeshwari | Yogeshwari |
| 23 | 912021105701 | VEERAMANITHASAN M | Veeramani | Veeramani | Veeramani | Veeramani | Veeramani | Veeramani |
| 24 | 912021105702 | RAMAN P | Raman | Raman | Raman | Raman | Raman | Raman |

Tea Break

FN- 11:00 am to 11:15am & AN-03:00 pm to 03:15 pm

Lunch Break

12:15 pm to 01:00pm

Devasani
Course coordinator

[Signature]
MOD/EEE

[Signature]
PRINCIPAL

Student Attendance Sheet

Academic Year : 2022-2023

Course Code : VACEE2223EEEE

Course Name : Electrical Estimation and Energy Auditing

Duration of hours : 35

Period of Course : 01.08.2022-5.08.2022

| Attendance Sheet | | | Date: | | | | | |
|------------------|-----------------|-----------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|
| Sl. No | Register Number | Student Name | 09.00 am - 10.00 am | 10.00 am - 11.00 am | 11.15 am - 12.15pm | 01.00 pm - 02.00 pm | 02.00 pm - 03.00 pm | 03.15 pm - 04.15 pm |
| 1 | 912021105001 | AJAI G | Ajai | Ajai | Ajai | Ajai | Ajai | Ajai |
| 2 | 912021105002 | AJITH N | Ajith | Ajith | Ajith | Ajith | Ajith | Ajith |
| 3 | 912021105003 | AKASH T | Akash | Akash | Akash | Akash | Akash | Akash |
| 4 | 912021105004 | ARCCHANA B A | Arcchana | Arcchana | Arcchana | Arcchana | Arcchana | Arcchana |
| 5 | 912021105005 | AROCKIA SIBI RAJA X | Sibiraj | Sibiraj | Sibiraj | Sibiraj | Sibiraj | Sibiraj |
| 6 | 912021105006 | CHANDRU K | Chandru | Chandru | Chandru | Chandru | Chandru | Chandru |
| 7 | 912021105008 | DHINESH B | Dhinesh | Dhinesh | Dhinesh | Dhinesh | Dhinesh | Dhinesh |
| 8 | 912021105009 | GOBINATH K | Gobi | Gobi | Gobi | Gobi | Gobi | Gobi |
| 9 | 912021105010 | GOWTHAMAN S | Gowtham | Gowtham | Gowtham | Gowtham | Gowtham | Gowtham |
| 10 | 912021105014 | MUTHU GOKUL V | Muthu | Muthu | Muthu | Muthu | Muthu | Muthu |
| 11 | 912021105017 | RAM KUMAR K | Ram | Ram | Ram | Ram | Ram | Ram |
| 12 | 912021105018 | SANJAY S | Sanjay | Sanjay | Sanjay | Sanjay | Sanjay | Sanjay |
| 13 | 912021105019 | SARUMATHI K | Sarumathi | Sarumathi | Sarumathi | Sarumathi | Sarumathi | Sarumathi |
| 14 | 912021105021 | SIBI CHAKKARAVARTHY A | Sibiraj | Sibiraj | Sibiraj | Sibiraj | Sibiraj | Sibiraj |
| 15 | 912021105022 | SOLAIMUTHU T | Solaimuthu | Solaimuthu | Solaimuthu | Solaimuthu | Solaimuthu | Solaimuthu |
| 16 | 912021105023 | SURYA PRAKASH S | Surya | Surya | Surya | Surya | Surya | Surya |
| 17 | 912021105024 | THANGA MUTHU S | Thanga | Thanga | Thanga | Thanga | Thanga | Thanga |
| 18 | 912021105025 | VAISHNAVI K | Vaishnavi | Vaishnavi | Vaishnavi | Vaishnavi | Vaishnavi | Vaishnavi |
| 19 | 912021105026 | VARUNKUMAR MS | Varunkumar | Varunkumar | Varunkumar | Varunkumar | Varunkumar | Varunkumar |
| 20 | 912021105027 | VASANTHAKUMAR A | Vasanthakumar | Vasanthakumar | Vasanthakumar | Vasanthakumar | Vasanthakumar | Vasanthakumar |
| 21 | 912021105029 | VIGNESH M | Vignesh | Vignesh | Vignesh | Vignesh | Vignesh | Vignesh |
| 22 | 912021105030 | YOGESHWARI M | Yogeshwari | Yogeshwari | Yogeshwari | Yogeshwari | Yogeshwari | Yogeshwari |
| 23 | 912021105701 | VEERAMANITHASAN M | Veeramani | Veeramani | Veeramani | Veeramani | Veeramani | Veeramani |
| 24 | 912021105702 | RAMAN P | Raman | Raman | Raman | Raman | Raman | Raman |

Tea Break FN- 11:00 am to 11:15am & AN-03:00 pm to 03:15 pm

Lunch Break 12:15 pm to 01:00pm

Course coordinator

Signature of Course Coordinator

Signature of Principal

PRINCIPAL

Student Attendance Sheet

Academic Year : 2022-2023

Course Code : VACEE2223EEEE

Course Name : Electrical Estimation and Energy Auditing

Duration of hours : 35

Period of Course : 01.08.2022-5.08.2022

| Attendance Sheet | | | Date: | | | | | |
|------------------|-----------------|-----------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|
| Sl. No | Register Number | Student Name | 09.00 am - 10.00 am | 10.00 am - 11.00 am | 11.15 am - 12.15pm | 01.00 pm - 02.00 pm | 02.00 pm - 03.00 pm | 03.15 pm - 04.15 pm |
| 1 | 912021105001 | AJAI G | Ajai | Ajai | Ajai | Ajai | Ajai | Ajai |
| 2 | 912021105002 | AJITH N | Ajith | Ajith | Ajith | Ajith | Ajith | Ajith |
| 3 | 912021105003 | AKASH T | Akash | Akash | Akash | Akash | Akash | Akash |
| 4 | 912021105004 | ARCCHANA B A | Arachana | Arachana | Arachana | Arachana | Arachana | Arachana |
| 5 | 912021105005 | AROCKIA SIBI RAJA X | Sibiraja | Sibiraja | Sibiraja | Sibiraja | Sibiraja | Sibiraja |
| 6 | 912021105006 | CHANDRU K | Chandru | Chandru | Chandru | Chandru | Chandru | Chandru |
| 7 | 912021105008 | DHINESH B | Dinesh | Dinesh | Dinesh | Dinesh | Dinesh | Dinesh |
| 8 | 912021105009 | GOBINATH K | Gobinath | Gobinath | Gobinath | Gobinath | Gobinath | Gobinath |
| 9 | 912021105010 | GOWTHAMAN S | Gowthaman | Gowthaman | Gowthaman | Gowthaman | Gowthaman | Gowthaman |
| 10 | 912021105014 | MUTHU GOKUL V | Muthu | Muthu | Muthu | Muthu | Muthu | Muthu |
| 11 | 912021105017 | RAM KUMAR K | Ram | Ram | Ram | Ram | Ram | Ram |
| 12 | 912021105018 | SANJAY S | Sanjay | Sanjay | Sanjay | Sanjay | Sanjay | Sanjay |
| 13 | 912021105019 | SARUMATHI K | Sarumathi | Sarumathi | Sarumathi | Sarumathi | Sarumathi | Sarumathi |
| 14 | 912021105021 | SIBI CHAKKARAVARTHY A | Sibi | Sibi | Sibi | Sibi | Sibi | Sibi |
| 15 | 912021105022 | SOLAIMUTHU T | Solaimuthu | Solaimuthu | Solaimuthu | Solaimuthu | Solaimuthu | Solaimuthu |
| 16 | 912021105023 | SURYA PRAKASH S | Surya | Surya | Surya | Surya | Surya | Surya |
| 17 | 912021105024 | THANGA MUTHU S | Thanga | Thanga | Thanga | Thanga | Thanga | Thanga |
| 18 | 912021105025 | VAISHNAVI K | Vaishnavi | Vaishnavi | Vaishnavi | Vaishnavi | Vaishnavi | Vaishnavi |
| 19 | 912021105026 | VARUNKUMAR MS | Varunkumar | Varunkumar | Varunkumar | Varunkumar | Varunkumar | Varunkumar |
| 20 | 912021105027 | VASANTHAKUMAR A | Vasanth | Vasanth | Vasanth | Vasanth | Vasanth | Vasanth |
| 21 | 912021105029 | VIGNESH M | Vignesh | Vignesh | Vignesh | Vignesh | Vignesh | Vignesh |
| 22 | 912021105030 | YOGESHWARI M | Yogeshwari | Yogeshwari | Yogeshwari | Yogeshwari | Yogeshwari | Yogeshwari |
| 23 | 912021105701 | VEERAMANITHASAN M | Veera | Veera | Veera | Veera | Veera | Veera |
| 24 | 912021105702 | RAMAN P | Raman | Raman | Raman | Raman | Raman | Raman |

Tea Break FN- 11:00 am to 11:15am & AN-03:00 pm to 03:15 pm

Lunch Break 12:15 pm to 01:00pm

Course coordinator

Signature of HOD/EEE

Signature of PRINCIPAL

Student Attendance Sheet

Academic Year : 2022-2023

Course Code : VACEE2223EEEE

Course Name : Electrical Estimation and Energy Auditing

Duration of hours : 35

Period of Course : 01.08.2022-5.08.2022

| Attendance Sheet | | | Date: | | | | | |
|------------------|-----------------|-----------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|
| Sl. No | Register Number | Student Name | 09.00 am - 10.00 am | 10.00 am - 11.00 am | 11.15 am - 12.15pm | 01.00 pm - 02.00 pm | 02.00 pm - 03.00 pm | 03.15 pm - 04.15 pm |
| 1 | 912021105001 | AJAI G | AG | AG | AG | AG | AG | AG |
| 2 | 912021105002 | AJITH N | AN | AN | AN | AN | AN | AN |
| 3 | 912021105003 | AKASH T | AT | AT | AT | AT | AT | AT |
| 4 | 912021105004 | ARCCHANA B A | AA | AA | AA | AA | AA | AA |
| 5 | 912021105005 | AROCKIA SIBI RAJA X | AS | AS | AS | AS | AS | AS |
| 6 | 912021105006 | CHANDRU K | CA | CA | CA | CA | CA | CA |
| 7 | 912021105008 | DHINESH B | DB | DB | DB | DB | DB | DB |
| 8 | 912021105009 | GOBINATH K | GA | GA | GA | GA | GA | GA |
| 9 | 912021105010 | GOWTHAMAN S | GS | GS | GS | GS | GS | GS |
| 10 | 912021105014 | MUTHU GOKUL V | MG | MG | MG | MG | MG | MG |
| 11 | 912021105017 | RAM KUMAR K | RA | RA | RA | RA | RA | RA |
| 12 | 912021105018 | SANJAY S | SS | SS | SS | SS | SS | SS |
| 13 | 912021105019 | SARUMATHI K | SA | SA | SA | SA | SA | SA |
| 14 | 912021105021 | SIBI CHAKKARAVARTHY A | SC | SC | SC | SC | SC | SC |
| 15 | 912021105022 | SOLAIMUTHU T | ST | ST | ST | ST | ST | ST |
| 16 | 912021105023 | SURYA PRAKASH S | SP | SP | SP | SP | SP | SP |
| 17 | 912021105024 | THANGA MUTHU S | TS | TS | TS | TS | TS | TS |
| 18 | 912021105025 | VAISHNAVI K | VA | VA | VA | VA | VA | VA |
| 19 | 912021105026 | VARUNKUMAR MS | VM | VM | VM | VM | VM | VM |
| 20 | 912021105027 | VASANTHAKUMAR A | VA | VA | VA | VA | VA | VA |
| 21 | 912021105029 | VIGNESH M | VM | VM | VM | VM | VM | VM |
| 22 | 912021105030 | YOGESHWARI M | YM | YM | YM | YM | YM | YM |
| 23 | 912021105701 | VEERAMANITHASAN M | VM | VM | VM | VM | VM | VM |
| 24 | 912021105702 | RAMAN P | RP | RP | RP | RP | RP | RP |

Tea Break FN- 11:00 am to 11:15am & AN-03:00 pm to 03:15 pm

Lunch Break 12:15 pm to 01:00pm

lalasan
Course coordinator

[Signature]
HOD/EEE

[Signature]
PRINCIPAL

Enrollment
Student Name
List

Pandian Saraswathi yadav Engineering College, Arasanoor -630561

Department of Electrical and Electronics Engineering

Student Registration Sheet

Academic Year : 2022-2023

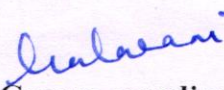
Course Code : VACEE2223EEEA

Course Name : Electrical Estimation and Energy Auditing

Duration of hours : 35

Period of Course : 01.08.2022-5.08.2022

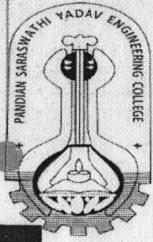
| Enrolled Students List | | | Signature |
|------------------------|-----------------|-----------------------|---------------------|
| Sl. No | Register Number | Student Name | |
| 1 | 912021105001 | AJAI G | Ajai |
| 2 | 912021105002 | AJITH N | Ajith |
| 3 | 912021105003 | AKASH T | Akash |
| 4 | 912021105004 | ARCCHANA B A | Arcchana |
| 5 | 912021105005 | AROCKIA SIBI RAJA X | Sibi Raja |
| 6 | 912021105006 | CHANDRU K | Chandru |
| 7 | 912021105008 | DHINESH B | Dhinesh |
| 8 | 912021105009 | GOBINATH K | Gobi |
| 9 | 912021105010 | GOWTHAMAN S | Gowtham |
| 10 | 912021105014 | MUTHU GOKUL V | Muthu |
| 11 | 912021105017 | RAM KUMAR K | Ram Kumar |
| 12 | 912021105018 | SANJAY S | Sanjays |
| 13 | 912021105019 | SARUMATHI K | Sarumathi |
| 14 | 912021105021 | SIBI CHAKKARAVARTHY A | Sibi Chakkaravarthy |
| 15 | 912021105022 | SOLAIMUTHU T | Solaimuthu |
| 16 | 912021105023 | SURYA PRAKASH S | Surya |
| 17 | 912021105024 | THANGA MUTHU S | Thanga Muthu |
| 18 | 912021105025 | VAISHNAVI K | Vaishnavi |
| 19 | 912021105026 | VARUNKUMAR MS | Varunkumar |
| 20 | 912021105027 | VASANTHAKUMAR A | Vasanthakumar |
| 21 | 912021105029 | VIGNESH M | Vignesh |
| 22 | 912021105030 | YOGESHWARI M | Yogeshwari |
| 23 | 912021105701 | VEERAMANITHASAN M | Veerasan |
| 24 | 912021105702 | RAMAN P | Raman |


Course coordinator


HOD/EEE


PRINCIPAL

MODEL
CERTIFICATES




PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

Approved by AICTE & Affiliated to Anna University, Chennai.
Arasanoor, Thirumansolai Post, Sivagangai – Madurai Highway, Tamilnadu - 630 561


Value added course on
ENERGY ESTIMATION AND ENERGY AUDITING
Organized by
**DEPARTMENT OF ELECTRICAL AND ELECTRONICS
ENGINEERING**

CERTIFICATE

This is Certify that **SANJAY S.** From **Second year**
EEE has participated in the value-added course on **ENERGY ESTIMATION AND ENERGY**
AUDITING organized by the Department of Electrical And Electronics Engineering From 1.8.2022 to
5.08.2022 (35 Hours) at Pandian Saraswathi Yadav Engineering College, Sivagangai.

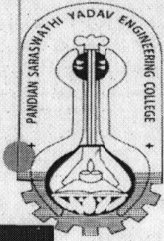

Mrs.S.Pandimeena
AP/EEE

Head of the Department


Dr.R.RAJA
Principal

R RAJA

Digitally signed by R
RAJA
Date: 2024.07.15
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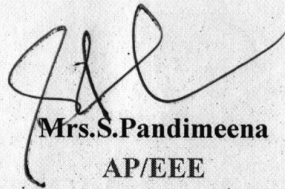
PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

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Arasanoor, Thirumansolai Post, Sivagangai – Madurai Highway, Tamilnadu - 630 561

Value added course on
ENERGY ESTIMATION AND ENERGY AUDITING
Organized by
**DEPARTMENT OF ELECTRICAL AND ELECTRONICS
ENGINEERING**

CERTIFICATE

This is Certify thatSOLAI MUTHU.T..... From **Second year**
EEE has participated in the value-added course on **ENERGY ESTIMATION AND ENERGY**
AUDITING organized by the Department of Electrical And Electronics Engineering From 1.8.2022 to
5.08.2022 (35 Hours) at Pandian Saraswathi Yadav Engineering College, Sivagangai.


Mrs.S.Pandimeena
AP/EEE

Head of the Department

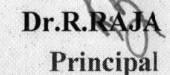
R RAJA

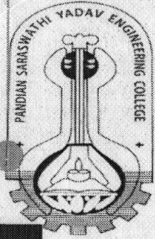
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RAJA

Date: 2024.07.15

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Dr.R.RAJA
Principal



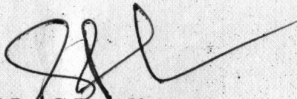
PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

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Arasanoor, Thirumansolai Post, Sivagangai – Madurai Highway, Tamilnadu - 630 561


Value added course on
ENERGY ESTIMATION AND ENERGY AUDITING
Organized by
**DEPARTMENT OF ELECTRICAL AND ELECTRONICS
ENGINEERING**

CERTIFICATE

This is Certify that **VIGNESH:M** From **Second year
EEE** has participated in the value-added course on **ENERGY ESTIMATION AND ENERGY
AUDITING** organized by the Department of Electrical And Electronics Engineering From 1.8.2022 to
5.08.2022 (35 Hours) at Pandian Saraswathi Yadav Engineering College, Sivagangai.


Mrs.S.Pandimeena
AP/EEE

Head of the Department


Dr.R.RAJA
Principal

R RAJA

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RAJA
Date: 2024.07.15
15:47:22 +05'30'