

**Hindustan College of Science & Technology, Farah, Mathura**  
**Department of Electrical and Electronics Engineering**

HCST/EE/ 2020/ ODD

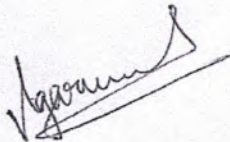
Date: 22/07/2020

**NOTICE**

All the students are hereby informed that the department of Electrical and Electronics Engineering is going to organize a training course in "Solar Technology" (30 hrs. teaching+ practice session) in the department from 08-08-2020.

Registration will be open from **25 July, 2020 to 30 July, 2020**. Please insure that you complete your registration within this time frame.

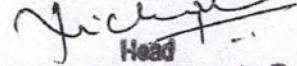
For any further any inquiries or clarifications regarding registration, kindly reach out Mr. Sunil Pathak, Office Staff, department of EEE.



Mr. Vivek Agrawal  
Course Coordinator

Mrs. Richa Kapoor

HOD, EEE, Deptt.



Head  
Dept. of Electrical & Electronics Engg.  
Hindustan College of Science & Technology  
Farah, Mathura



Director  
Hindustan College of  
Science & Technology  
FARAH (MATHURA)



HINDUSTAN COLLEGE OF SCIENCE & TECHNOLOGY,  
FARAH -MATHURA

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING



*Value Added Course*  
**VEE2001 – SOLAR TECHNOLOGY**

**8<sup>th</sup> AUG '2020 –12<sup>th</sup> DEC 2020 - Every Saturday: 3:00 PM – 5:00 PM**

***Students From Any Branch Can Join the Course***



By

*Mr. Vivek Agrawal*  
*Assistant Professor, Electrical & Electronics Engineering*  
*Research Interest: Control System*

Registration Dates  
25<sup>th</sup> Jul 2020 – 30<sup>th</sup> Jul 2020

For Registration: Please contact  
Mr. Sunil Pathak, Office Staff, Department of EEE

**Prerequisites: Basics Electrical Engineering**

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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

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**VEE2001 – SOLAR TECHNOLOGY**

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**Course Objectives**

The main objective of this value added course are as follows:

- 1) Understand the fundamental principles of solar energy and its conversion to electrical power.
- 2) Explore different types of solar panels and their working mechanisms.
- 3) Learn about the components and design considerations of solar photovoltaic systems.
- 4) Gain hands-on experience in solar panel installation, wiring, and troubleshooting.
- 5) Analyze the economic and environmental aspects of solar energy.
- 6) Stay updated with the latest advancements in solar technology and future trends.

**Course Syllabus**

| Units | Details   | Course Out comes |
|-------|---|------------------|
| 1     | Introduction to Solar Energy : Overview of renewable energy sources, solar radiation and its measurement, Solar energy conversion technologies, Photovoltaic effect and solar cell operation, Environmental and economic benefits of solar energy   | CO1              |
| 2     | Solar Panel Technology : Types of solar panels: monocrystalline, polycrystalline, thin-film, etc., Construction and working principles of solar panels, Efficiency, power output, and degradation of solar panels, Factors affecting solar panel performance, Comparison of different solar panel technologies                              | CO2              |
| 3     | Solar Photovoltaic Systems : System components: solar panels, inverters, charge controllers, batteries, etc., System design considerations: load estimation, sizing, shading analysis, Grid-tied vs. off-grid systems, Performance monitoring and maintenance of solar PV systems, Safety protocols and regulations for solar installations | CO3              |
| 4     | Solar Panel Installation and Troubleshooting : Hands-on installation of solar panels on various surfaces, Mounting techniques and wiring practices, Electrical safety and code compliance, Testing and commissioning of solar PV systems, Troubleshooting common issues in solar installations  | CO4              |
| 5     | Advanced Topics and Future Trends : Emerging technologies in solar energy, Energy storage solutions for solar systems, Integration of solar power with smart grids, Policy and market trends in the solar industry, Research and development opportunities in solar technology  | CO5              |

**Prerequisites: Basic Electrical Engineering**

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**8<sup>th</sup> AUG '2020 –12<sup>th</sup> DEC 2020 - Every Saturday: 3:00 PM – 5:00 PM**

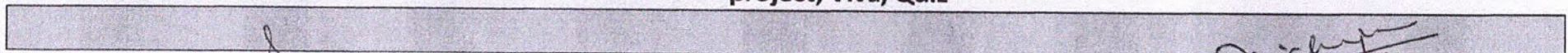
**Course Outcomes**

- CO1** Students will gain a comprehensive understanding of the fundamental principles underlying solar energy, including the behavior of photons, the conversion of sunlight into electricity, and the various types of solar technologies.
- CO2** Students will learn how to design and analyze solar systems, including photovoltaic (PV) systems and solar thermal systems. They will acquire the necessary skills to assess the energy requirements, evaluate site conditions, determine system sizing, and optimize the performance of solar installations.
- CO3** Students will develop the ability to assess the solar energy potential of different locations. They will learn how to analyze solar radiation data, evaluate shading effects, and calculate the expected energy output of solar systems in order to make informed decisions regarding system deployment.
- CO4** Students will explore the integration of solar technology with existing energy systems, such as the electrical grid and buildings. They will learn about the challenges and opportunities associated with grid-tied solar systems, net metering, energy storage, and the incorporation of solar energy into building design and construction.
- CO5** The course will cover the broader aspects of solar technology, including its environmental sustainability and the policy frameworks that govern its implementation.

**CO-PO Mappings**

| COS     | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1     | 3   |     |     |     |     |     |     |     |     |      |      |      | 2    | 3    |
| CO2     | 3   | 3   | 3   |     |     |     |     |     |     |      |      |      | 3    | 2    |
| CO3     | 3   | 3   | 3   |     | 3   | 3   |     |     |     |      |      | 3    | 3    | 3    |
| CO4     | 3   | 3   | 3   |     | 3   | 3   |     |     |     |      |      | 3    | 3    | 3    |
| CO5     | 3   | 3   | 3   |     | 3   | 3   |     |     |     |      |      | 3    | 3    | 3    |
| Average | 3   | 3   | 3   |     | 3   | 3   |     |     |     |      |      | 3    | 3    | 2.8  |

**Evaluation Criteria: 1. Evaluation of Practical assignments, Group project, Viva/Quiz**



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Director  
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**DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING**



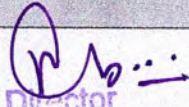
*Value Added Course*  
**VEE2001 – SOLAR TECHNOLOGY**

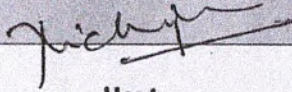
**8<sup>th</sup> AUG '2020 –12<sup>th</sup> DEC 2020 - Every Saturday: 3:00 PM – 5:00 PM**

**Program Schedule**

| Session                              | Date       | Time              | No of Hours | Session Topic                                     | Resource Person   |
|--------------------------------------|------------|-------------------|-------------|---|-------------------|
| 1                                    | 08/08/2020 | 3:00 PM - 5:00 PM | 2           | Introduction to Solar Energy                      | Mr. Vivek Agrawal |
| 2                                    | 22/08/20   | 3:00 PM - 5:00 PM | 2           | Photovoltaic (PV) Cells and Modules               | Mr. Vivek Agrawal |
| 3                                    | 29/08/20   | 3:00 PM - 5:00 PM | 2           | Solar Panel Design and Installation               | Mr. Vivek Agrawal |
| 4                                    | 05/09/20   | 3:00 PM - 5:00 PM | 2           | Solar Energy Conversion Systems                   | Mr. Vivek Agrawal |
| 5                                    | 12/09/20   | 3:00 PM - 5:00 PM | 2           | Solar Power Electronics                           | Mr. Vivek Agrawal |
| 6                                    | 19/09/20   | 3:00 PM - 5:00 PM | 2           | Solar Resource Assessment and Site Analysis       | Mr. Vivek Agrawal |
| 7                                    | 26/09/2020 | 3:00 PM - 5:00 PM | 2           | Solar Thermal Systems                             | Mr. Vivek Agrawal |
| 8                                    | 03/10/20   | 3:00 PM - 5:00 PM | 2           | Concentrated Solar Power (CSP)                    | Mr. Vivek Agrawal |
| 9                                    | 10/10/20   | 3:00 PM - 5:00 PM | 2           | Solar Energy Storage                              | Mr. Vivek Agrawal |
| 10                                   | 17/10/20   | 3:00 PM - 5:00 PM | 2           | Solar System Economics and Policy                 | Mr. Vivek Agrawal |
| 11                                   | 31/10/20   | 3:00 PM - 5:00 PM | 2           | Solar Energy Integration and Grid Interconnection | Mr. Vivek Agrawal |
| 12                                   | 07/11/20   | 3:00 PM - 5:00 PM | 2           | Solar Energy Applications                         | Mr. Vivek Agrawal |
| 13                                   | 21/11/20   | 3:00 PM - 5:00 PM | 2           | Solar Energy in Developing Countries              | Mr. Vivek Agrawal |
| 14                                   | 28/11/20   | 3:00 PM - 5:00 PM | 2           | Solar Energy and the Environment                  | Mr. Vivek Agrawal |
| 15                                   | 05/11/20   | 3:00 PM - 5:00 PM | 2           | Emerging Trends in Solar Technology               | Mr. Vivek Agrawal |
| 16                                   | 12/12/20   | 3:00 PM - 5:00 PM | 2           | Solar Energy Storage                              | Mr. Vivek Agrawal |
| <b>Total Number of Hours covered</b> |            |                   | <b>32</b>   |   |                   |

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 Director  
 Hindustan College of  
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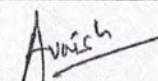
  
 Head  
 Dept. of Electrical & Electronics Engg.  
 Hindustan College of Science & Technology  
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**Hindustan College of Science and Technology - Mathura**  
**Electrical and Electronics Department**  
**CLASS TIME TABLE FOR ODD SEMESTER 2020-21**

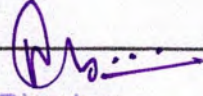
SESSION: 2020-21      W.E.F : 2/8/2020      CLASS TEACHER: Mr. Vineet Kumar  
 YEAR/SEM-SEC: 2nd Year/ 3rd Sem      ROOM.NO : 108      COUNSELLORS : Mr. Vineet Kumar

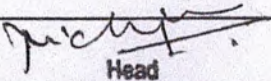
| Time / Day | I                | II               | III                                   | IV               | V              | VI               | VII  | VIII           |
|------------|------------------|------------------|---------------------------------------|------------------|----------------|------------------|--|----------------|
|            | 10:10 TO 11:00   | 11:00 TO 11:50   | 11:50 TO 12:40                        | 12:40 TO 01:30   | 01:30 TO 02:20 | 02:20 TO 03:00   | 03:00 TO 04:00                                 | 04:00 TO 05:00 |
| MONDAY     | EMI<br>VA<br>108 | EE<br>AJ<br>108  | CSC<br>AB<br>108                      | EMI<br>JK<br>108 | <b>LUNCH</b>   | UHV<br>AG<br>108 | Mini Project (VA/TR)                           |                |
| TUESDAY    | EMI<br>JK<br>108 | PDP              |                                       | BSS<br>AS<br>108 |                | EE<br>AJ<br>108  | UHV<br>AG<br>108                               |                |
| WEDNESDAY  | EMI<br>VK<br>108 | EMI<br>JK<br>108 | CSC<br>AB<br>108                      | UHV<br>AG<br>108 |                | EE<br>AJ<br>108  | Analog Electronics Lab (AJ / JY)               |                |
| THURSDAY   | BSS<br>AS<br>108 | EMI<br>VK<br>108 | CSC<br>AB<br>108                      | UHV<br>AG<br>108 |                | EE<br>AJ<br>108  | EMI LAB (VK / TR)                              |                |
| FRIDAY     | EE<br>AJ<br>108  | EMI<br>VK<br>108 | BSS<br>AS<br>108                      | EMI<br>JK<br>108 |                | PDP              |  |                |
| SATURDAY   | BSS<br>AS<br>108 | EMI<br>VK<br>108 | Electrical Workshop Lab (EW)<br>AS/TR |                  |                | EMI<br>JK<br>108 | Value Added Course<br>Mr. Vivek Agarwal<br>101 |                |

| Name of the Subject                                 | Subject Code | Name of the Faculty             | Total No. of Lect./Tut./Practical |      |        |
|---|--------------|---------------------------------|-----------------------------------|------|--------|
|   |              |                                 | Lect.                             | Tut. | Pract. |
| Electrical Measurements & Instrumentation (EMI)     | KEE302       | Mr. Vineet Kumar                | 4                                 | 1    | 0      |
| Basic Signals & Systems (BSS)                       | KEE303       | Mr. Avnish Singh                | 4                                 | 0    | 0      |
| Electromagnetic Field Theory (EMFT)                 | KEE301       | Mr. Himanshu Rajput (ECE)       | 4                                 | 1    | 0      |
| Electronics Engineering (EE)                        | KOE038       | Mr. Ajeet Singh (ECE)           | 4                                 | 1    | 0      |
| Universal Human Value                               | KVE301       | Dr. Archana Gautam (Humanities) | 4                                 | 0    | 0      |
| Computer System Security                            | KNC301       | Mr. Atul Barsaiyan (CSE)        | 3                                 | 0    | 0      |
| Electrical Measurements & Instrumentation Lab (EMI) | KEE352       | Mr. Vineet Kumar                |                                   |      | 2      |
| Electrical Workshop Lab (EW)                        | KEE353       | Mr. Avnish Singh                |                                   |      | 2      |
| Analog Electronics Lab (AE)                         | KEE351       | Mr. Ajeet Singh (ECE)           |                                   |      | 2      |
| Mini Project (MP)                                   | KEE354       | Mr. Vivek Agrawal               |                                   |      | 2      |
| Value Added Course                                  | VEE 2001     | Mr. Vivek Agarwal               |                                   |      | 2      |
| PDP   |              | T & D Deptt.                    |                                   |      | 4      |

  
 Avnish  
 Time Table Incharge

Dr. Richa Kapoor  
 HOD, EE

  
 Director  
 Hindustan College of  
 Science & Technology  
 FARAH (MATHURA)

  
 Head  
 Dept. of Electrical & Electronics Engg.  
 Hindustan College of Science & Technology  
 Farah, Mathura

**Hindustan College of Science and Technology - Mathura**  
**Electrical and Electronics Department**  
**CLASS TIME TABLE FOR ODD SEMESTER 2020-21**

SESSION: 2020-21

W.E.F : 02/8/20

CLASS TEACHER: Mr. Avnish Singh

YEAR/SEM-SEC: 3rd Year/ 5th Sem

ROOM.NO : 107

COUNSELLORS : Mr. Avnish Singh

| Time / Day | I                  | II                 | III                                   | IV                 | V              | VI                                  | VII  | VIII           |
|------------|--------------------|--------------------|---------------------------------------|--------------------|----------------|-------------------------------------|--|----------------|
|            | 10:10 TO 11:00     | 11:00 TO 11:50     | 11:50 TO 12:40                        | 12:40 TO 01:30     | 01:30 TO 02:20 | 02:20 TO 03:00                      | 03:00 TO 04:00                                 | 04:00 TO 05:00 |
| MONDAY     | EM-II<br>RK<br>107 | S & T<br>VA<br>107 | CS<br>AS<br>107                       | PS-I<br>SK<br>107  | <b>LUNCH</b>   | ADC<br>VK<br>107                    | Const. of India<br>R. Prasad<br>108            |                |
| TUESDAY    | CS<br>AS<br>107    | EM-II<br>RK<br>107 | S & T<br>VA<br>107                    | PS-I<br>SK<br>107  |                | PDP                                 |  |                |
| WEDNESDAY  | CS<br>AS<br>107    | EM-II<br>RK<br>107 | PS-I<br>SK<br>107                     | S & T<br>VA<br>107 |                | ADC<br>VK<br>107                    | Mini Project<br>AS/TR                          |                |
| THURSDAY   | PS-I<br>SK<br>107  | PDP                |                                       | ADC<br>VK<br>107   |                | CS<br>AS<br>107                     | Control System Lab<br>AS/JY                    |                |
| FRIDAY     | PS-I<br>SK<br>107  | EM-II<br>RK<br>107 | S & T<br>VA<br>107                    | CS<br>AS<br>107    |                | Const. of India<br>R. Prasad<br>108 | Power System I lab<br>SK/JY                    |                |
| SATURDAY   | ADC<br>VK<br>107   | EM-II<br>RK<br>107 | Electrical Machines - II Lab<br>RK/JY |                    |                | Const. of India<br>R. Prasad<br>108 | Value Added Course<br>Mr. Vivek Agarwal<br>101 |                |

| Name of the Subject                      | Subject Code | Name of the Faculty | Total No. of Lect./Tut./Practical |      |        |
|--|--------------|---------------------|-----------------------------------|------|--------|
|  |              |                     | Lect.                             | Tut. | Pract. |
| Constitution of India                    | KNC-501      | Mr. R Prasad (ME)   | 3                                 | 0    | 0      |
| Sesnsors & Transducers                   | KEE-052      | Mr. Vivek Agrawal   | 4                                 | 0    | 0      |
| Electrical Machines - II (EM-II)         | KEE-503      | Dr. Richa Kapoor    | 4                                 | 1    | 0      |
| Power System I                           | KEE-501      | Dr. Sanjeev Kumar   | 4                                 | 1    | 0      |
| Control System (CS)                      | KEE-502      | Mr. Avnish Singh    | 4                                 | 1    | 0      |
| Analog & Digital Communication           | KEE-058      | Mr. Vineet Kumar    | 4                                 | 0    | 0      |
| Power System I lab                       | KEE-551      | Dr. Sanjeev Kumar   |                                   |      | 2      |
| Control System Lab (CS Lab)              | KEE-552      | Mr. Avnish Singh    |                                   |      | 2      |
| Electrical Machines - II Lab (EM-II Lab) | KEE-553      | Dr. Richa Kapoor    |                                   |      | 2      |
| Mini Project                             | KEE-554      | Dr. Sanjeev Kumar   |                                   |      | 2      |
| Value Added Course                       | VEE 2001     | Mr. Vivek Agarwal   |                                   |      | 2      |
| PDP                                      |              | T & D Deptt.        |                                   |      | 4      |

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Time Table Incharge

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# Hindustan College of Science & Technology

## Department of Electrical & Electronics Engineering

### Value Added Course - Registration Form

Course Name: Solar Technology Course Code: VEE2001

Session 2020-21

From August 2020 to December 2020

| Sr. No. | Roll No.      | Name                   | Dept | Sem | Signature of Student |
|---------|---------------|------------------------|------|-----|----------------------|
| 1       | 1900640210001 | Atul Kumar             | EEE  | III | Atul                 |
| 2       | 1900640210002 | Hrithik Sharma         | EEE  | III | Hrithik              |
| 3       | 1900640210004 | Mohit Kushwah          | EEE  | III | Mohit                |
| 4       | 1900640210005 | Nipun Raj              | EEE  | III | Nipun                |
| 5       | 1900640210006 | Nishant Kumar          | EEE  | III | Nishant              |
| 6       | 1900640210007 | Rishabh Yadav          | EEE  | III | Rishabh              |
| 7       | 1900640210008 | Sahil Raj              | EEE  | III | Sahil                |
| 8       | 2000640219001 | Lavlesh Kumar          | EEE  | III | Lavlesh              |
| 9       | 2000640219002 | Utkarsh Kumar          | EEE  | III | Utkarsh              |
| 10      | 1806421001    | ABHISHEK MITTAL        | EEE  | V   | Abhishek             |
| 11      | 1806421002    | ABHISHEK SHARMA        | EEE  | V   | Abhishek             |
| 12      | 1806421003    | AKASH SINGH            | EEE  | V   | Akash                |
| 13      | 1806421004    | AMIT GUPTA             | EEE  | V   | Amit                 |
| 14      | 1806421005    | ASMIT SAHU             | EEE  | V   | Asmit                |
| 15      | 1806421006    | CHAUDHARY RAVI SHANKAR | EEE  | V   | Chaudhary            |
| 16      | 1806421007    | DEVENDRA KUMAR         | EEE  | V   | Devendra             |
| 17      | 1806421008    | KABIR PRATAP SINGH     | EEE  | V   | Kabir                |
| 18      | 1806421010    | KRISHNAKANT RAJPUT     | EEE  | V   | Krishnakant          |
| 19      | 1806421011    | LAVANSHU GOYAL         | EEE  | V   | Lavanshu             |
| 20      | 1806421012    | Sachin Saxena          | EEE  | V   | Sachin               |
| 21      | 1806421013    | SADIK KHAN             | EEE  | V   | Sadik                |
| 22      | 1806421015    | SHASHANK SHARMA        | EEE  | V   | Shashank             |
| 23      | 1806421016    | TARUN KUMAR SENGAR     | EEE  | V   | Tarun                |
| 24      | 1806421017    | TUSHAR JAIN            | EEE  | V   | Tushar               |
| 25      | 1806421018    | VAIBHAV JAIN           | EEE  | V   | Vaibhav              |
| 26      | 1900640219003 | Hiya Agarwal           | EEE  | V   | Hiya                 |
| 27      | 1706421009    | LOKESH SHARMA          | EEE  | V   | Lokesh               |
| 28      | 1900640219001 | Archana Kumari         | EEE  | V   | Archana              |
| 29      | 1900640219002 | Ayush Dixit            | EEE  | V   | Ayush                |

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Head of Department  
Electrical & Electronics Engineering  
Hindustan College of Science & Technology  
Farah, Mathura

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Director

Hindustan College of  
Science & Technology  
FARAH (MATHURA)



# Hindustan College of Science & Technology

## Department of Electrical & Electronics Engineering

### Value Added Course - Attendance Sheet

### Course Name: Solar Technology Course Code:VEE2001

Session 2020-21 (Year 2021)

Session wise Attendance Sheet

| S. No. | Roll No.      | Name            | SEM | Signature of the Student |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|--------|---------------|-----------------|-----|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|        |               |                 |     | 1                        | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    |
|        |               |                 |     | 08/08                    | 22/08 | 29/08 | 05/09 | 12/09 | 19/09 | 26/09 | 03/10 | 10/10 | 17/10 | 31/10 | 07/11 | 21/11 | 28/11 | 05/12 |
| 1      | 1900640210001 | Atul Kumar      | III | P                        | A     | P     | P     | P     | P     | P     | P     | P     | P     | P     | P     | P     | P     | A     |
| 2      | 1900640210002 | Hrithik Sharma  | III | P                        | P     | A     | P     | P     | P     | P     | P     | P     | P     | P     | P     | A     | P     | P     |
| 3      | 1900640210004 | Mohit Kushwah   | III | P                        | P     | P     | P     | A     | P     | P     | P     | P     | P     | P     | P     | A     | P     | P     |
| 4      | 1900640210005 | Nipun Raj       | III | P                        | P     | P     | A     | P     | P     | P     | P     | P     | P     | A     | P     | P     | P     | P     |
| 5      | 1900640210006 | Nishant Kumar   | III | P                        | P     | P     | P     | P     | P     | A     | P     | P     | P     | A     | P     | P     | P     | P     |
| 6      | 1900640210007 | Rishabh Yadav   | III | P                        | P     | P     | P     | P     | A     | P     | P     | P     | A     | P     | P     | P     | P     | P     |
| 7      | 1900640210008 | Sahil Raj       | III | P                        | P     | P     | P     | P     | P     | P     | A     | A     | P     | P     | P     | P     | P     | P     |
| 8      | 2000640219001 | Lavlesh Kumar   | III | P                        | P     | P     | P     | P     | P     | A     | P     | A     | P     | P     | P     | P     | P     | P     |
| 9      | 2000640219002 | Utkarsh Kumar   | III | P                        | P     | P     | P     | P     | A     | P     | P     | P     | A     | P     | P     | P     | P     | P     |
| 10     | 1806421001    | ABHISHEK MITTAL | V   | P                        | P     | P     | A     | P     | P     | P     | P     | P     | P     | A     | P     | P     | P     | P     |
| 11     | 1806421002    | ABHISHEK SHARMA | V   | P                        | P     | P     | P     | A     | P     | P     | P     | P     | P     | A     | P     | P     | P     | P     |
| 12     | 1806421003    | AKASH SINGH     | V   | P                        | A     | P     | P     | P     | P     | P     | P     | P     | P     | P     | A     | P     | P     | P     |
| 13     | 1806421004    | AMRITA SINGH    | V   | P                        | P     | A     | P     | P     | P     | P     | P     | P     | P     | P     | P     | A     | P     | P     |
| 14     | 1806421005    | AMRITA SINGH    | V   | P                        | P     | P     | A     | P     | P     | P     | P     | P     | P     | P     | P     | P     | P     | A     |

Atul

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|    |               |                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|----|---------------|--------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 1806421006    | CHAUDHARY RAVI SHA | V | P | P | P | P | P | A | P | P | P | P | P | P | P | A | P |
| 16 | 1806421007    | DEVENDRA KUMAR     | V | P | P | P | P | A | P | P | P | P | P | P | A | P | P | P |
| 17 | 1806421008    | KABIR PRATAP SINGH | V | P | P | P | P | P | P | P | A | P | P | P | A | P | P |   |
| 18 | 1806421010    | KRISHNAKANT RAJPUT | V | P | P | P | P | P | P | A | P | P | A | P | P | P | P |   |
| 19 | 1806421011    | LAVANSHU GOYAL     | V | P | P | P | P | P | A | P | P | A | P | P | P | P | P |   |
| 20 | 1806421012    | Sachin Saxena      | V | P | P | P | P | P | P | P | P | A | P | A | P | P | P |   |
| 21 | 1806421013    | SADIK KHAN         | V | P | P | P | P | P | P | P | A | P | P | P | A | P | P |   |
| 22 | 1806421015    | SHASHANK SHARMA    | V | P | P | P | P | P | A | P | P | P | P | A | P | P | P |   |
| 23 | 1806421016    | TARUN KUMAR SENGAL | V | P | P | P | P | P | A | P | P | P | A | P | P | P | P |   |
| 24 | 1806421017    | TUSHAR JAIN        | V | P | P | P | P | P | P | A | P | P | P | P | P | A | P |   |
| 25 | 1806421018    | VAIBHAV JAIN       | V | P | P | P | P | A | P | P | P | P | P | P | P | P | A |   |
| 26 | 1900640219003 | Hiya Agarwal       | V | P | P | P | A | P | P | P | P | P | P | P | P | P | P |   |
| 27 | 1705421009    | LOKESH SHARMA      | V | P | P | P | A | P | P | P | P | P | P | P | A | P | P |   |
| 28 | 1900640219001 | Archana Kumari     | V | P | P | A | P | P | P | P | P | P | P | P | P | P | P |   |
| 29 | 1900640219002 | Ayush Dixit        | V | P | A | P | P | P | P | P | P | P | P | P | P | P | P |   |

R  
 Dev  
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 Kanku  
 Sachin  
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Department of Electrical & Electronics Engineering

# Certificate

## OF COMPLETION

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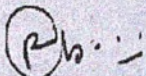
**Atul Kumar**

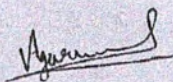
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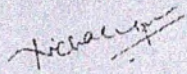
Roll No.-  
**1900640210001**

Department of Electrical and Electronics  
Engineering has successfully completed 30 hours of Value Added Course (VEE  
2001) titled

**"SOLAR TECHNOLOGY"**

  
Dr. R. K. Upadhyay  
Director

  
Mr. Vivek Agrawal  
Coordinator

  
Dr. Richa Kapoor  
HOD -EEE

Hindustan College of Science and Technology, Farah, Mathura

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Hindustan College of  
Science & Technology



Department of Electrical & Electronics Engineering

# Certificate

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