VIDHYADEEP UNIVERSITY
Holy Flame of Knowledge

THIRD-YEAR DIPLOMA ELECTRICAL ENGINEERING SYLLABUS

Semester: 5th

Course Code Lab: 002203574 **Type of Course:** PEC-LC-1

Course Name: SOLAR POWER TECHNOLOGIES

Course Prerequisites:

COURSE OBJECTIVE(S):

The aim of this course is to help the student to attain the following industry identified competency through various teaching learning experiences:

- Maintain the efficient operation of various types of solar power technologies

TEACHING & EXAMINATION SCHEME:

Teaching Scheme (Hrs/Week)				Examination Scheme					
Theory	Tutorial	Practical	Credit	SEE		CA			Total
				Th	Pr	MSE	PLE	LA	
0	0	2	1	0	25	0	0	25	50

SEE: Semester End Examination; CA: Continuous Assessment; Th: Theory; Pr: Practical; MSE: Mid Semester Examination; PLE: Participatory Learning Experience; LA: Laboratory Assessment

*TOTAL Practical Hours: No. of Pr. and Prt.Hrs/Week*15 = 30*

LIST OF PRACTICALS: *(sample for 2 hrs/week)*15 weeks*

Sr. No.	Content	Unit No.	Time Duration
1	Dismantle solar power heaters.	1	2
2	Assemble solar power heaters.	1	2
3	Assemble the parabolic dish CSP plant.	1	2
4	Dismantle the parabolic dish CSP plant.	2	2
5	Troubleshoot a CSP plant.	2	2
6	Assemble the solar PV system.	3	2
7	Dismantle the solar PV system.	3	2
8	Troubleshoot a solar PV system.	3	2
9	Troubleshoot a solar PV panels and arrays.	3	2
10	Troubleshoot solar inverters.	3	2
11	Troubleshoot solar signal conditioners.	4	2
12	Troubleshoot solar PV MPPT systems.	4	2
13	Troubleshoot solar off-grid systems.	4	2
14	Troubleshoot solar net metering systems.	5	2
15	Troubleshoot solar-wind hybrid systems.	5	2
		TOTAL	30

Text Book(s):

Title of the Book	Author(s)	Publication
Renewable Energy Technologies	Vinod Thombr	Nirali Prakashan
Solar And Wind Energy	R P Ajwalia	Atul Prakashan

Solar & Wind Energy	Anup Goel	Technical Publication

Reference Book(s):

Title of the Book	Author(s)	Publication
Solar Photovoltaics: Fundamentals, Technologies and Applications	Solanki, Chetan Singh	PHI Learning
Renewable Energy Sources and Emerging Technologies	Kothari, D.P	PHI Learning

Web Material Link(s):

- https://nptel.ac.in/courses/108102121/

Equivalent/Corresponding Course on NPTEL (SWAYAM):

PRACTICAL EVALUATION:

Sr. No.	Activity	Marks	Weightage
1	Semester End Examination (External Practical)	25	60%
2	Continuous Assessment Practical (CAP)	25	40%
	Semester End Examination (External Practical)		
1(a)	Lab Experiment/Exercise		30%
1(b)	Viva-voce		20%
1(c)	Certified Record		10%
	Continuous Assessment Practical (CAP)		
2(a)	Day to day Laboratory Work & Attendance		15%
2(b)	Submission of Laboratory Work/Journal		10%
2(c)	Exam		15%

* For 4 Credit Subjects

1 Credit = 25 Marks
Theory: 3 Credits = 75 Marks
Practicals: 1 Credit = 25 Marks
SEE Evaluation will be of 100 marks and converted to 50 Marks (75 Th + 25 Pr)
CA Evaluation will be of 100 Marks and converted to 50 Marks. (75 Th + 25 Pr)

Distribution of Marks for Theory Evaluation as per Bloom's Taxonomy Level:

Level	Remember	Understand	Apply	Analyze	Evaluate	Create
% Weightage	20%	20%	20%	10%	20%	10%

THIRD-YEAR DIPLOMA ELECTRICAL ENGINEERING SYLLABUS

COURSE OUTCOMES:

CO1	Understand electric vehicle, and its applications.
CO2	Understand selection of appropriate motor for EV applications.
CO3	Understand requirement of battery type, characteristics for EV applications.
CO4	Understand requirement of power train & in-wheel drive operation.
CO5	Understand safety requirement for EVs.