BACKWARD CLASS YOUTH RELIEF COMMITTEE'S

BHIWAPUR MAHAVIDYALAYA

BHIWAPUR DIST. NAGPUR- 441201

ACCREDITED WITH GRADE 'B' (CGPA-2.54) BY NAAC, BENGALURU

ISO-9001:2015

AFFILIATED TO RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

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ACTIVITY REPORT

ACADEMIC SESSION	2022-2023
ORGANIZER	Bhiwapur Mahavidyalaya
NAME OF THE ACTIVITY	Certificate Course in "Energy Efficiency and Energy Conservation"
AREAS COVERED	• Energy Resources • Energy Efficiency • Solar Energy • Energy Conservation • Green Energy
PROGRAMME SCHEDULE	2nd March , 2023 to 6th April, 2023 (3.00 P.M to 4.00 P.M)
VENUE	Physics Laboratory
MODE OF ACTIVITY	Offline
ORGANIZING COMMITTEE	Committee for Running B. Voc. Degree Programmes, Community Colleges, Career Oriented Programmes, Advanced Diploma Programmes and One Student One Skill Programme (OSOSP).
PROGRAMME COORDINATOR	Asst. Prof. Dr. Anita Mahawadiwar

<table>
<tr><td>COMMITTEE MEMBERS</td><td colspan="4">1. Asst. Prof. Dr. Raheel Quraishi
2. Asst. Prof. Dr. Ashwini Kadu
3. Asst. Prof. Amit Thakare
4. Asst. Prof. Sachin Kubde
5. Asst. Prof. Dr. Ravikant Mishra</td></tr>
<tr><td>KEYNOTE SPEAKER / RESOURCE PERSON (Furnish a Brief Report on the Keynote Speaker's Expertise)</td><td colspan="4">Asst. Prof. Dr. Yogesh More,
Head, Department of Physics,
Bhiwapur Mahavidyalaya, Bhiwapur</td></tr>
<tr><td>TARGET GROUP</td><td colspan="4">Entire Students of Bachelor of Science (B.Sc.)</td></tr>
<tr><td>NUMBER OF STUDENTS PARTICIPATED / BENEFICIARIES</td><td colspan="4">22</td></tr>
<tr><td rowspan="8">SYLLABUS</td><td>S.N.</td><td>Name of Topic</td><td>S.N.</td><td>Name of Topic</td></tr>
<tr><td>1</td><td>Introduction of Energy Resources.</td><td>16</td><td>Fluid Mechanics involved in Wind Mill.</td></tr>
<tr><td>2</td><td>Types of Energy Resources.</td><td>17</td><td>Wind Farm: Setup, Requirements and problems involved.</td></tr>
<tr><td>3</td><td>Basic concepts of Electrical Energy.</td><td>18</td><td>Introduction to Hydro Power Energy. Route of energy conversion.</td></tr>
<tr><td>4</td><td>Circuit law, Magnetic Circuit.</td><td>19</td><td>Description of main parts of Hydropower Station: Block diagram of Small Hydro Power Station.</td></tr>
<tr><td>5</td><td>AC Fundamentals, Measurement and Measuring instruments.</td><td>20</td><td>Operational principle of Synchronous Generator. Speed frequency relationship.</td></tr>
<tr><td>6</td><td>Concepts of</td><td>21</td><td>Introduction to</td></tr>
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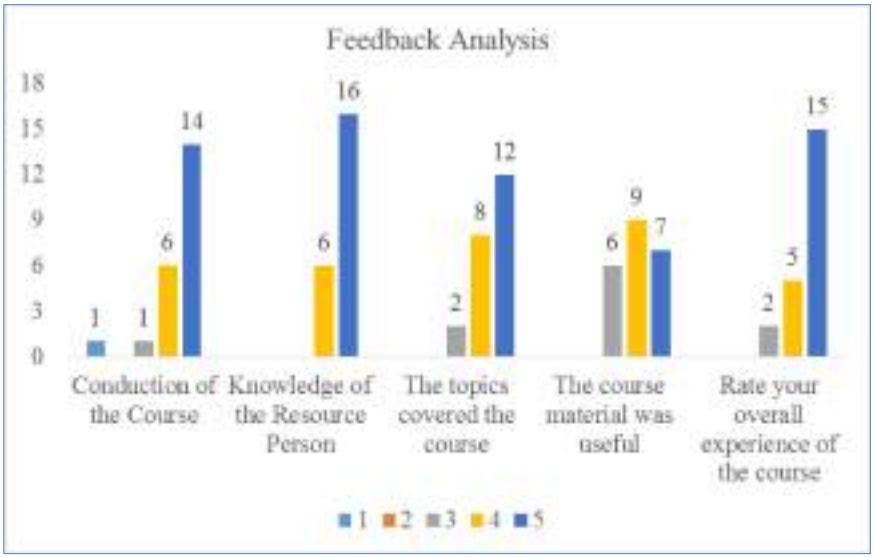
		resistance, inductance, capacitance, and various factors affecting them. Concepts of current, voltage, power, energy and their units.		Biomass Energy. Biomass: constituents at molecular level, at chemical level, energy properties. Biofuels: liquid (biodiesel, bioethanol), gaseous (syngas, biogas), solid (charcoal and bio char).
	7	Fractional Kilowatt Motors and single phase induction Motors.	22	Biomass conversion: Physical conversion-Dewatering, drying, size reduction, steam explosion, densification, pelleting, chipping, oil extraction. Biomass conversion: Chemical conversion-Oil trans-esterification (biodiesel production). Hydrolysis.
	8	Generation, Transmission and Distribution of Electrical Energy.	23	Biomass storage and feeding systems. Combustion plants for heat generation: wood and pellet burning stoves; wood, pellet and wood chips boilers; plant schemes for heat generation; control, protection and safety systems.
	9	Introduction to Renewable Sources of Energy.	24	Methane combustion and methane steam reforming. Gasification of biomass. Thermochemical processes coupled to gas turbine.
	10	Solar Energy and its Applications.	25	Introduction to Biofuel.
	11	Conversion of Solar	26	Greenhouse Gases,

		Energy into other forms of Energy.		Photosynthesis for Biofuels.
	12	Photovoltaic Cell and its working.	27	Biochemical Conversion Process, bioethanol production from 1st and 2nd generation biomass feedstock, bio hydrogen, and methane.
	13	Solar Panel Designing and Circuit Fabrication.	28	Biodiesel Process, vegetable oil sources and production, current technologies and challenges.
	14	Wind Energy and Wind Power Plants.	29	Brief summary of the Course
	15	Wind Turbine Working Mechanism.	30	Certificate Examination.
BRIEF REPORT	The Internal Quality Assurance Cell of our Institution, under the aegis of 'Committee for Running B. Voc. Degree Programmes, Community Colleges, Career Oriented Programmes, Advanced Diploma Programmes and One Student One Skill Programme (OSOSP)', organized a Certificate Course in "Energy Efficiency and Energy Conservation". The Course was conducted from 2nd March, 2023 to 6th April, 2023. Asst. Prof. Dr. Yogesh More, Head, Department of Physics, Bhiwapur Mahavidyalaya, played a pivotal role as the Resource Person for the success of this Course. His adept handling of the Course left a significant impact on the participants. The formal inauguration of the Course was conducted in the presence of Asst. Prof. Dr. Ashwini Kadu, Head, Department of Chemistry, Bhiwapur Mahavidyalaya on 2nd March, 2023. The Event was witnessed by all the faculty members of the Science Stream.			

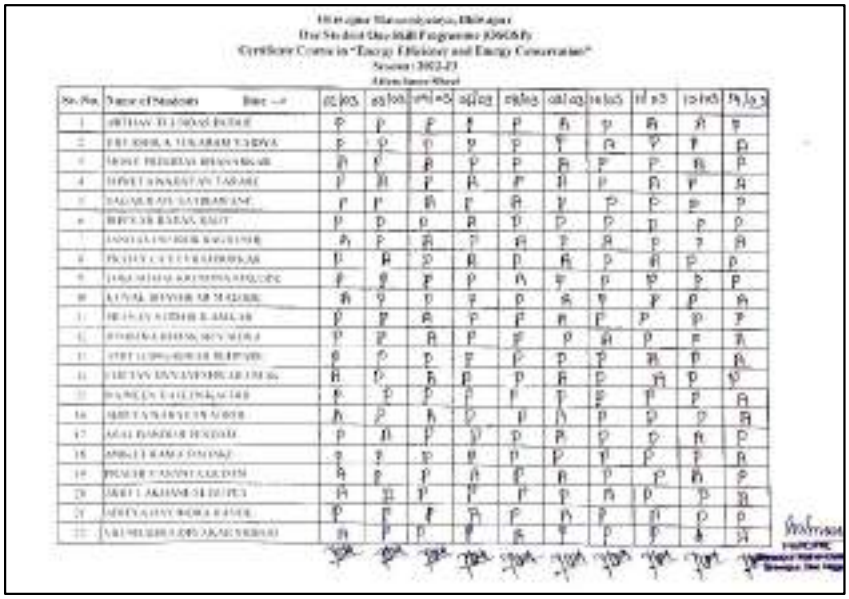
	A total of 22 students pursuing their Bachelor of Science Degree enrolled their names in this Course. The syllabus was thoughtfully crafted with the primary objective of fostering awareness about Energy Efficiency and Energy Conservation among the students. The Course was over on 6th April, 2023 with the final examination held on the same day. Certificates were duly distributed to all the students who successfully completed the Course.
PROGRAMME OBJECTIVES	• To raise awareness among students about the importance of energy efficiency and conservation in today's world. • To equip students with practical skills and knowledge related to energy conservation techniques and practices. • To supplement the academic learning of the students with a specialized course on Energy Conservation. • To provide students with practical, hands-on experience in energy-saving techniques and practices. • To instill a sense of responsibility towards sustainability and the environment by educating students on energy conservation. • To contribute to the National goals of energy conservation and sustainable development by educating and engaging the younger generation. • To enhance the employability of students by equipping them with skills and knowledge relevant to the growing field of energy efficiency.

	• To recognize and celebrate the achievements of students who successfully completed the Course, motivating them for future endeavours.
PROBLEMS FACED, IF ANY	**Scheduling Conflicts**: Students and faculty members had conflicting schedules, which made it challenging for them to attend the Course consistently. **Student Engagement**: Maintaining high levels of students' engagement throughout the Course was a matter of concern, especially when dealing with complex technical topics. However, the Committee addressed these challenges through effective planning, communication and flexibility, thereby ensuring the resounding success of the Certificate Course.
PROGRAMME OUTCOMES	• Raised awareness among students about the importance of energy efficiency and conservation in today's world. • Equipped students with practical skills and knowledge related to energy conservation techniques and practices. • Supplemented the academic learning of the students with a specialized Course on Energy Conservation. • Provided students with practical, hands-on experience in energy-saving techniques and practices. • Instilled a sense of responsibility towards sustainability and the environment by educating students on energy conservation. • Contributed to the National goals of energy conservation and sustainable development by educating and engaging the younger generation. • Enhanced the employability of students by equipping them with skills and knowledge relevant to the growing

	field of energy efficiency. • Recognized and celebrated the achievements of students who successfully completed the Course, motivating them for future endeavours.
FEEDBACK ANALYSIS REPORT OF THE FEEDBACK OBTAINED FROM STUDENTS/BENEFICIARIES/ACADEMIC PEERS	 Feedback Analysis of the Course.
PHOTO GALLERY WITH CAPTIONS	 Asst. Prof. Dr. Yogesh More briefing about the objectives of the Certificate Course in "Energy Efficiency and Energy Conservation".

Asst. Prof. Dr. Yogesh More explaining the concepts of "Energy Efficiency and Energy Conservation" to the students during the Course.

Asst. Prof. Dr. Yogesh More explaining the concepts of "Energy Efficiency and Energy Conservation" to the students during the Course.

	 Backward Class Youth Relief Committee's **BHIWAPUR MAHAVIDYALAYA, BHIWAPUR** Dist. Nagpur, Maharashtra- 441 201 Accredited with Grade 'B' (CGPA-2.54) by NAAC, Bengaluru ISO-9001:2015 Affiliated to RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR **ONE STUDENT ONE SKILL PROGRAMME** This is to certify that Mr./Mrs./Mrs. Pawar Sudhir Tirupati of B.Sc. II has successfully completed the Skill Development Programme in Energy Efficiency & Energy Conservation organized under the auspices of Bhiwapur Mahavidyalaya, Bhiwapur during the Academic Session 20 - 20 Place : Date : Dr. Anita V. Maheswarwar Coordinator OSOSP Dr. Jobi George Principal Certificate issued to the students.
SCANNED COPY OF ATTENDANCE SHEET	 **Attendance Sheet of the Students**

JOBI GEORGE

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Date: 2023.09.13 13:34:14 +05'30'

Principal
Bhiwapur Mahavidyalaya