GUEST LECTURE REPORT

Topic	:	Psychrometrics and Air-conditioning Systems
Speaker	:	Mr. Shyam Sunder, Assistant Professor of Mechanical Engineering Adhiyamaan College of Engineering, Hosur
Date	:	25/07/2024

Overview

On 25th July 2024, the Department of Mechanical Engineering hosted a guest lecture on "Psychrometrics and Air-conditioning Systems" delivered by Mr. Shyam Sunder, an esteemed Assistant Professor from Adhiyamaan College of Engineering, Hosur. This educational event aimed to enhance the understanding of both students and faculty members about the intricate psychrometric properties of air and the fundamental processes involved in air-conditioning systems.

Topics Covered

The lecture was structured into several key segments, each focusing on a different aspect of psychrometrics and air-conditioning systems:

1. **Psychometric Properties of Air:**
   - Mr. Sunder began the lecture by explaining the basic properties of air, including temperature, humidity, and specific enthalpy. He emphasized how these properties interact to affect indoor air quality and human comfort.
2. **Understanding the Psychometric Chart:**
   - The speaker introduced the psychometric chart, an essential tool in HVAC design and analysis. He detailed how to interpret the chart and apply it to real-world scenarios, demonstrating its utility in visualizing the conditions of air.
3. **Analyzing Air-Conditioning Processes:**
   - The core of the lecture was dedicated to explaining various air-conditioning processes:
     - **Heating:** Discussion on how heating affects air properties and the implications for system design.
     - **Cooling:** Techniques for effective air cooling and the impact on psychrometric parameters.

- **Dehumidification and Humidification:** Methods and reasons for controlling air moisture levels, including health and comfort considerations.
- These processes were illustrated with practical examples and common challenges encountered in design and operation.

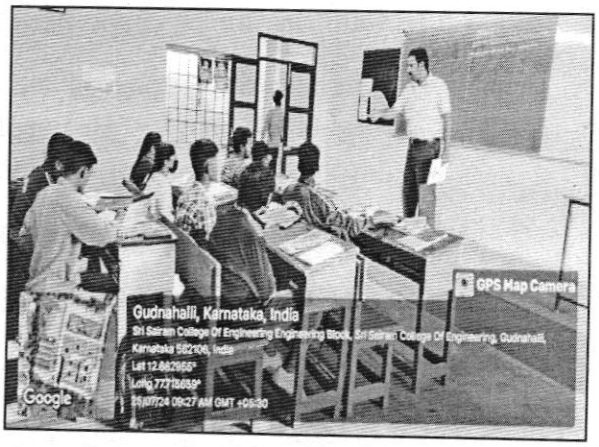
4. **Evaporative Cooling:**
   - An in-depth look at evaporative cooling techniques was provided, with an explanation of its advantages and limitations in different climatic conditions.
5. **Adiabatic Mixing of Two Moist Air Streams:**
   - The final topic covered the adiabatic mixing process, essential for understanding how different air streams combine within HVAC systems and the resultant effects on indoor air quality.

Impact and Feedback

The lecture was well-received, with participants appreciating the clarity and depth of the content presented. Students and faculty alike benefited from Mr. Sunder's expertise, gaining a deeper insight into the practical applications of psychrometrics in air-conditioning systems.

Conclusion

Mr. Shyam Sunder's guest lecture provided valuable knowledge and practical insights into the field of air-conditioning systems, significantly contributing to the academic and professional development of our students. The Department of Mechanical Engineering looks forward to organizing more such events to continually enhance the educational experience at our institution.



K. Sivasakthi Balan 26/7/24

(Dr. SIVASAKTHI BALAN K)
Associate Professor

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26/07/2024

Submitted to the principal for further needful.
26/7/2024