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Noise Exposure Assessment at the Faculty of Engineering Laboratory and Faculty of Applied Science Furniture Workshop

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Structured Abstract

Background: In a serene laboratory with minimal background noise, concentration thrives, and work becomes more manageable. The controlled noise levels from machines contribute to a comfortable and controlled atmosphere, allowing straightforward communication among students and lab attendants. Contrastingly, a noisy laboratory introduces challenges, making it difficult to concentrate or engage in conversations without raising one's voice. This difficulty in maintaining focus may adversely affect the quality of studies, raising concerns about the accuracy of research and adding stress to the environment.

Methods: The monitoring process identifies excessive noise sources through a walkthrough inspection. Using a sound level meter (SLM), noise emissions from machinery and ambient noise are quantified. Measurements are taken at various intervals or locations to capture changes in noise levels, essential for determining noise exposure levels. A 'Walk-Around Survey,' measuring actual noise and plotting contoured levels on the layout plan. This mapping visualizes noise exposure levels, aligning with DOSH Malaysia ICOP guidelines.

Results: The Faculty of Applied Science Furniture Workshop complies with a Noise Exposure Limit below 82 dB(A). Points A1 to A3 have acceptable sound levels, posing no immediate harm. While the Faculty of Chemical Engineering Laboratory is overall compliant, the air compressor at A5 exceeds the Limit. At A5, categorized as level 3 (red), the sound pressure level surpasses the Noise Exposure Limit of 85 dB(A) based on noise mapping. Statistical analysis using SPSS reveals a significant difference (p-value = 0.018) in noise levels between the Engineering Chemical Laboratory and the Furniture Workshop of Applied Science.

Conclusion:In conclusion, the Faculty of Applied Science Furniture Workshop generally complies with a Noise Exposure Limit below 82 dB(A). However, concerns arise at point A5 in the Faculty of Chemical Engineering Laboratory, where the air compressor exceeds the Limit. The statistical analysis using SPSS indicates a significant difference in noise levels between the Engineering Chemical Laboratory and the Furniture Workshop of Applied Science.

Keywords: Noise, Noise Exposure Limit, dB(A), Sound Level Meter

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