ABSTRAK

Penelitian ini bertujuan untuk mengevaluasi kinerja sistem HVAC (*Heating, Ventilation, and Air Conditionin*g) dan pencahayaan di Gedung Teknik Elektro Universitas Malikussaleh berdasarkan faktor lingkungan dan kesesuaian dengan Standar Nasional Indonesia (SNI). Evaluasi ini penting dilakukan untuk memastikan kenyamanan dan efisiensi energi di lingkungan Universitas Malikussaleh. Pengukuran mencakup suhu, kelembapan, dan intensitas cahaya di beberapa ruangan. Hasil yang didapatkan dari penelitian menunjukkan bahwa suhu di seluruh ruangan berada dalam rentang standar SNI (22°C hingga 29°C), namun cenderung mendekati batas atas, dengan suhu tertinggi 30°C di ruang FT.04.03.05 dan terendah 26,9°C di Ruang Kajur. Kelembapan relatif melebihi standar SNI (40% hingga 60%), dengan kelembapan tertinggi 73% di Ruang Kelas FT.04.02.05 dan terendah 63,2% di Ruang Sidang 1, 2, dan 3. Intensitas cahaya di banyak ruangan tidak memenuhi standar, terutama di ruang kelas dan laboratorium. Standar SNI untuk ruang kelas sebesar 250 lux, ruang kerja 350 lux, dan laboratorium 500 lux. Intensitas terendah tercatat 164,75 lux di Ruang Kelas FT.04.02.05, sementara intensitas tertinggi tercatat 388 lux di Lab Komputer, yang masih di bawah standar untuk laboratorium. Beberapa ruangan memerlukan penambahan unit lampu untuk mencapai tingkat pencahayaan sesuai standar. Penelitian ini menyimpulkan bahwa meskipun suhu relatif sesuai standar, kelembapan dan intensitas cahaya perlu ditingkatkan agar sesuai dengan standar SNI.

Kata kunci: Kelembapan, Intensitas Cahaya, Standar SNI, Temperatur.

ABSTRACT

This study aims to evaluate the performance of HVAC (Heating, Ventilation, and Air Conditioning) and lighting systems in the Electrical Engineering Building of Malikussaleh University based on environmental factors and compliance with Indonesian National Standards (SNI). This evaluation is important to ensure comfort and energy efficiency in Malikussaleh University environment. Measurements include temperature, humidity, and light intensity in several rooms. The results obtained from the study show that the temperature in all rooms is within the SNI standard range (22°C to 29°C), but tends to be close to the upper limit, with the highest temperature of 30°C in room FT.04.03.05 and the lowest of 26.9°C in the Kajur Room. Relative humidity exceeds SNI standards (40% to 60%), with the highest humidity of 73% in Classroom FT.04.02.05 and the lowest of 63.2% in Courtrooms 1, 2, and 3. Light intensity in many rooms does not meet standards, especially in classrooms and laboratories. The SNI standard for classrooms is 250 lux, workspaces 350 lux, and laboratories 500 lux. The lowest intensity was recorded at 164.75 lux in Classroom FT.04.02.05, while the highest intensity was recorded at 388 lux in the Computer Lab, which is still below the standard for laboratories. Some rooms require additional light units to reach the standard lighting level. The study concludes that although the relative temperature is within the standard, the humidity and light intensity need to be increased in order to reach the standard.

Keywords: Humidity, Light Intensity, SNI Standard, Temperature.