

**DESIGNING ELECTRICAL INSTALLATION BASED ON SMART BUILDING
AT THE INTEGRATED LABORATORY
IN THE UNIVERSITY OF TECHNOLOGY YOGYAKARTA**

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ABSTRAK

Since 2018, University of Technology Yogyakarta has been building new buildings intensively to facilitate the learning-teaching process such as integrated laboratory building. As an Electrical Engineering student, it would be an opportunity to contribute significantly to the alma mater by designing electrical installations, especially lighting and power systems. The construction of the building requires a good planning including electrical installation to provide a sense of security and comfort for building users. Besides, it is also required to design a lighting system, an electric safety system, and earthing system. The results of the design obtained the power assumption required from PLN for connection of 105,000 VA. Building electricity distribution safety used for the main panel of MCCB 3 phase 160 Ampere, for the first floor MCB 32 amperes for 3 phases, 2nd floor MCB 50 amperes for 3 phases, 3rd floor MCB 40 amperes for 3 phases, lower floor MCB 32 amperes for 3 phase. The earthing system used rod electrodes with a diameter of 26 mm with a length of 4 m for each electrode, and installed as many as 3 earthing points and each point consisting of 4 electrode rods.

Keywords: *Installation, lighting, electric safety, earthing*