# ABSTRACT

## CHARACTERIZATION OF SUPLEMENTS IN WEAKLY SUPPLEMENTED MODULES

**By**

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Let $R$ Ring, $M$ $R$-module, $N, L$ and $K$ are submodules of $M$ $R$-module. $N$ is called suplement of $L$ in $M$ if $N$ is minimal in the set of submodules $\{ K \subset M | L + K = M \}$, $L + N = M$ and $L \cap N \ll N$. Supplemented modules is module that every submodule has supplement. $N$ is called weak supplement of $L$ in $M$ if $L + N = M$ and $L \cap N \ll M$. Weakly supplemented modules is module that every submodule has weak supplement.

In this research, we describe characterization weakly supplemented modules. For submodule $K \subset M$ that is weakly supplemented modules is supplement in $M$ if and only if $K$ is a *coclosed* submodule in $M$.

**Key words :** *module, supplement, weak supplement, coclosed submodule.*