

1135-05-2044

**Chris A Rodger** (rodgec1@auburn.edu), 221 Parker Hall, Auburn University, Auburn, AL 36849, and **Bin Yeh\*** (bzy0006@auburn.edu), 221 Parker Hall, Auburn University, Auburn, AL 36849. *Decomposing Graphs With Two Associate Classes Into Paths Of Length 3.*

For nonnegative integers  $n, p, \lambda_1$ , and  $\lambda_2$ , the graph of two associate classes  $G(n, p, \lambda_1, \lambda_2)$  is the graph with  $np$  vertices, partitioned into  $p$  parts  $V_1, \dots, V_p$ , each of size  $n$ , in which two vertices are joined by  $\lambda_1$  edges if they are in the same part, and by  $\lambda_2$  edges if they are in different parts. In this paper, we completely settled the decomposition problem of graphs with two associate classes into paths of length 3. (Received September 25, 2017)