1026-05-15 **M Brennan**, **D Gagliardi** and **M Lewinter*** (`marty.lewinter@purchase.edu`), Purchase College (SUNY), Dept. of Natural Science, Purchase, NY 10577. *Irregularizable Graphs.*

A multigraph is a graph with multiple edges between some pairs of vertices. A graph G of order n in [1] is called irregularizable if there exists a multigraph M such that G is a spanning subgraph of M and the degree sequence of M is n, n-1, n-2, ... , 1. A graph G with degree sequence dn, dn-1,... , d2, d1 is called degree dominated (DD) if di <= i for 1 <= i <= n. Note that the minimum degree for a DD graph is 1. In [1] and [2], it is shown that all trees are DD. It is also shown there that a DD graph G of order n is irregularizable if and only if n = 0 or 3 (mod 4). We establish analogous results when the minimum degree > 1. To this end, a graph G of order n is called degree dominated from k if di <= k+i-1 for 1 <= i <= n. A graph G of order n is called irregularizable from k if there exists a multigraph M such that G is a spanning subgraph of M and the degree sequence of M is k+n-1, k+n-2, ..., k+1, k. Given a graph G which is DD from k, we present modularity conditions under which G is irregularizable from k.

[1] F. Harary D. Gagliardi and M. Lewinter. Which graphs are irregularizable. Unpublished Manuscript. [2] F. Harary D. Gagliardi and M. Lewinter. A lower bound for the number of irregular multigraphs. Graph Theory Notes of New York, XXXI, 1996. (Received December 18, 2006)