MAD: Mathematics: Discrete Courses

Courses

MAD 3107   Discrete Mathematics and Applications
3 sh (may not be repeated for credit)
Prerequisite: MHF 3202*
Introductory combinatorics, counting, graphs and trees, and their applications; relations and partial orders; some algorithms associated with applications of graphs, trees, and relations.

MAD 4301   Graphs and Their Application
3 sh (may not be repeated for credit)
Prerequisite: MHF 3202
Directed and undirected graphs, basic concepts and terminology, paths and cycles, Euler and Hamiltonian cycles, bipartite Graphs, matchings in bipartite graphs, connectivity, graph colorings, planar graphs, graph models, and applications. Offered concurrently with MAD 5305; graduate students will be assigned additional work.

MAD 4401   Numerical Analysis
3 sh (may not be repeated for credit)
Prerequisite: MAS 3105

MAD 4905   Directed Study
1-12 sh (may be repeated indefinitely for credit)

MAD 5305   Graphs and Their Applications
3 sh (may not be repeated for credit)
Directed and undirected graphs, basic concepts and terminology, paths and cycles, Euler and Hamiltonian cycles, bipartite graphs, matchings in bipartite graphs, connectivity, graph colorings, planar graphs, graph models, and applications. Offered concurrently with MAD 4310; graduate students will be assigned additional work.

MAD 5905   Directed Study
1-12 sh (may be repeated indefinitely for credit)

MAD 6396   Topics in Combinatorial Theory
3 sh (may not be repeated for credit)
This course is devoted to topics chosen from among graph theory, coding theory, matroid theory, design theory, finite geometries, projective geometries, optimization, and searching and sorting algorithms.

MAD 6405   Numerical Analysis I
3 sh (may not be repeated for credit)
Theoretical treatment of numerical methods of linear algebra supplemented with use of computers; polynomial approximations, uniform approximations, least square approximations, error analysis for numerical solutions of linear equations, algebraic eigenvalue problems.

* This course may be taken prior to or during the same term.