1145-C5-1293 **Edmund A Lamagna*** (`eal@cs.uri.edu`), University of Rhode Island, Department of Computer Science & Statistics, Kingston, RI 02881. *Puzzling Through Discrete Mathematics.*

The presenter teaches an applied, yet mathematically rigorous, course on combinatorial problem solving. Algorithmic thinking is emphasized throughout, and the course provides a solid foundation for a follow-on course on the design and analysis of algorithms. Major topics include sets, logic, probability, proofs by induction and contradiction, the pigeonhole principle, arrangements, selections, distributions, binomial identities, inclusion-exclusion, recurrence relations and recursion, and graphs and trees.

Each class begins with a set of puzzles (typically four) that introduce and begin to stimulate thinking about the topic for the day. Students work on the puzzles in small groups for about one-third the period. When puzzles were introduced, it was thought that less material could be covered but this would be outweighed by an increase in student interest and participation, and the course would be more fun. Unexpectedly, all the original material can still be covered since students are now better prepared and motivated for the more traditional presentation that follows "puzzle time."

The key to this approach is selecting relevant, intriguing puzzles for each topic. Examples covering a variety of subjects that have been successfully utilized are presented in the talk. (Received September 20, 2018)