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Donald E. Hooley* (hooleyd@bluffton.edu), Bluffton University, 1 University Drive, Bluffton, OH 45817. *Bluffton's Explore and Explain Mathematics Courses for Middle School Teachers.*

This presentation will describe the content and structure of two courses designed specifically for pre-service middle school mathematics teachers at Bluffton University. Our program requires courses in precalculus or discrete mathematics, calculus, understanding numerical data, mathematics for elementary teachers and a post student teaching seminar. Remaining CBMS MET recommended content and material necessary for PRAXIS exams and Ohio licensure is contained in Bluffton's Algebra, Functions and Modeling or Geometry for Middle Childhood courses. Teaching strategies used in both special courses include presentation of open-ended questions, group exploration, verbal reporting and written explanations with website-based references. Pedagogical approaches emphasized are those of guided constructivism and generalization in restricted mathematical settings. Sample introductory questions, activities and sources will be presented. These will be selected from class lessons on topics in number theory, theory of arithmetic, personal finance, theory of equations, plane and transformational geometry, graphs, polyhedra and fractals. (Received August 10, 2006)