Math 80520 (Topics in Mathematical Logic): Computable Structure Theory

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Computable structure theory connects bounds on complexity with definability using formulas of special forms. The course will be based on the two-volume modern treatment of the area by Antonio Montalbán. I will cover some of the material from Volume 1, which is available on Montalbán's website. Here the bounds on complexity are arithmetical. I will also cover some of the material that will go into Volume 2. Here the bounds on complexity are may be hyperarithmetical, or in some cases, just Borel.