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Nonequilibrium Statistical Mechanics for Today's Graduate Students

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The notion of nonequilibrium statistical mechanics as a tool for analysis of many body systems is emphasized to support its value to graduate students in general. Its evolution across a wide range of fields within and beyond physics over the past half century is recalled. Much of the earlier focus on detailed and systematic applications to simple systems has been replaced by more qualitative analysis of complex systems. A case is made for the utility of a carefully composed course in nonequilibrium statistical mechanics as a means of thinking about problems in condensed matter physics, materials sciences, chemical physics, and particle physics.