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During the past decade or so, theoretical astrophysics has emerged as one of the most active research areas in physics. This advance has also been reflected in the greater interdisciplinary nature of research that has been carried out in this area in recent years. As a result, those who are leaving theoretical astrophysics with the aim of making a research career in this subject need to assimilate a considerable amount of concepts and techniques, including those of astrophysics, in a short period of time. Every area of theoretical astrophysics, of course, has excellent textbooks that allow the reader to master that particular area in a well-defined way. Most of these textbooks, however, are written in a traditional style that focusses on one area of astrophysics (e.g. stellar evolution, galactic dynamics, radiative processes, cosmology, etc.). Because different authors have different perspectives regarding their subject matter, it is not very easy for a student to understand the key unifying principles behind several different astrophysical phenomena by studying a plethora of separate textbooks, as they do not link up together as a series of core books in theoretical astrophysics covering everything that a student would need. A few books, which do cover the whole of astrophysics, deal with the subject at a rather elementary (first-course) level.

What we require is clearly something analogous to the famous Landau-Lifshitz course in theoretical physics, but focussed to the subject of theoretical astrophysics at a fairly advanced level. In such a course, one could present all the key physical concepts (e.g. radiative processes, fluid mechanics, plasma physics,