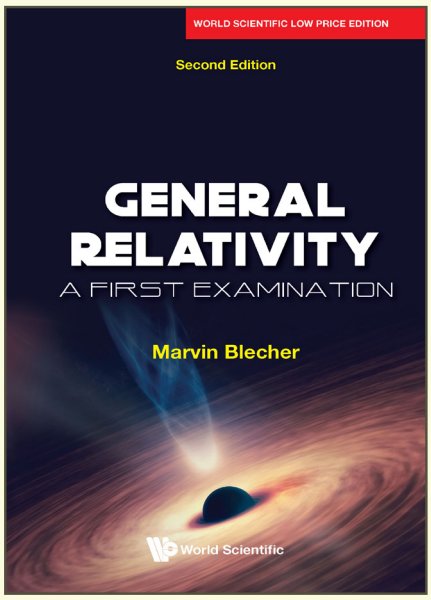
General Relativity, 2nd Edition

A First Examination



By **Marvin Blecher**
(Virginia Tech, USA)

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ABOUT THE BOOK

This textbook is suitable for a one-semester introduction to General Relativity for advanced undergraduates in physics and engineering. The book is concise so that the entire material can be covered in the one-semester time frame. Many of the calculations are done in detail, without difficult mathematics, to help the students. Though concise, the theory development is lucid and the readers are exposed to possible analytic calculations.

In the second edition, the famous twin paradox with acceleration is solved in full from the accelerated observer's frame. The findings of the Event Horizon Telescope (EHT) collaboration, who captured the first ever image of a black hole, are discussed in detail. The geodetic and frame drag precessions of gyroscopes in orbit about a rotating Earth are worked out and the Gravity Probe B (GPB) experiment is discussed. Also in the second edition are some new exercise problems.

Resources are provided to instructors who adopt this textbook for their courses. Adopting instructors can print and copy portions of these resources solely for their teaching needs. All instructional resources are furnished for informational use only, and are subject to change without notice.

READERSHIP

Advanced undergraduate and graduate physics students.

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- Curvature
- Gravity and General Relativity
- Classic Solar System Tests of General Relativity
- Gravitational Waves
- Black Holes and Kerr Space
- Cosmology
- Bibliography
- Index

ABOUT THE AUTHOR

Marvin Blecher has been Professor Emeritus at Virginia Tech since 2010. During his active faculty career he conducted experiments in nuclear and particle physics. His teaching has included courses in electromagnetism, mechanics, modern physics, and general relativity, among others.

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