

# General relativity

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Revision {2012, 9, 24, 19, 18, 56}
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## A) INTRODUCTION

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## B) HELP

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## C) PHYSICAL CONSTANTS

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## D) OWN (?) CONSIDERATIONS

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## E) CALCULATIONS FROM

**James Foster, J.David Nightingale**  
***A SHORT COURSE IN GENERAL RELATIVITY***  
(3.ed., 2006)

**with *Mathematica* code by David Park** (2005, for the 2. ed. [1995])  
partially modified, corrected and simplified by Luigi E. Masciovecchio (2011)

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## Chapter 1: Vector and tensor fields

- 1.0 Introduction p. 7

- 1.1 Coordinate systems in Euclidean space p. 7 - 13 (*nonsuffix notation*)

- 1.2 Suffix notation p. 13 - 19

- **1.3 Tangents and gradients p. 19 - 23**

- **1.4 Coordinate transformations in Euclidean space p. 23 - 27**

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- **1.6 Surfaces in Euclidean space p. 30 - 35**

- **1.7 Manifolds p. 35-37**

coming soon...

- **1.8 Tensor Fields on manifolds p. 38 - 43**

"We can create new tensors from old tensors by a number of methods."

coming soon...

- **1.9 Metric properties p. 43 - 46 (*pseudo-Riemannian manifolds*)**

coming soon...

- **1.10 What and where are the bases? p. 46 - 49**

coming soon...

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coming soon...

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coming soon...

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coming soon...

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## Chapter 5: Gravitational radiation

coming soon...

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## Chapter 6: Elements of cosmology

coming soon...

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## Appendices

coming soon...

*"Nur wer nicht sucht, ist vor Irrtum sicher."*

**Albert Einstein** (1879-1955)