

## CHAPTER OVERVIEW

### 4: Rigid Body Rotation

No real solid body is perfectly rigid. A rotating nonrigid body will be distorted by centrifugal force\* or by interactions with other bodies. Nevertheless most people will allow that in practice some solids are fairly rigid, are rotating at only a modest speed, and any distortion is small compared with the overall size of the body. No excuses, therefore, are needed or offered for analyzing, to begin with the rotation of a rigid body.

- [4.1: Introduction to Rigid Body Rotation](#)
- [4.2: Angular Velocity and Eulerian Angles](#)
- [4.3: Kinetic Energy of Rigid Body Rotation](#)
- [4.4: Lagrange's Equations of Motion](#)
- [4.5: Euler's Equations of Motion](#)
- [4.6: Force-free Motion of a Rigid Asymmetric Top](#)
- [4.7: Nonrigid Rotator](#)
- [4.8: Force-free Motion of a Rigid Symmetric Top](#)
- [4.9: Centrifugal and Coriolis Forces](#)
- [4.10: The Top](#)
- [4.11: Appendix](#)

---

This page titled [4: Rigid Body Rotation](#) is shared under a [CC BY-NC 4.0](#) license and was authored, remixed, and/or curated by [Jeremy Tatum](#) via [source content](#) that was edited to the style and standards of the LibreTexts platform.