Outline of Classical Physics

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1 Classical Physics

• Classical Mechanics
  – Newtonian Mechanics, Celestial Mechanics, Geometric Optics
  – Lagrangian Mechanics, Hamiltonian Mechanics
  – Statistical Mechanics, Thermodynamics
  – Continuum Mechanics
  – Classical Electrodynamics (Including Light and Optics)
  – Special Relativity, General Relativity

• Classical Field Theory
  – (What things don’t seem to involve “mechanisms”? Kinematics is usually grouped under mechanics, along with dynamics. Least action, most entropy, and other variational principles don’t seem to be mechanistic, but they also fall in the category of mechanics.)

Explain these divisions.
Classical mechanics is most broadly divided into the following categories:

  Kinematics
  Statics
  Dynamics

Classical physics overall, may be divided into the following categories, some of which overlap:

  Newtonian Mechanics
  Celestial Mechanics
  Geometric Optics
  Lagrangian Mechanics
  Hamiltonian Mechanics
  Continuum Mechanics
  Classical Field Theory
  Statistical Mechanics
  Thermodynamics
  Special Relativity
  General Relativity

2 Domains

• Classical versus Quantum Physics
• Modern: A mix of Classical and Quantum
• Agreements and Disagreements between Classical and Quantum Physics
• The non-fundamental and too-complicated (society, the brain, too many variables)
• The Unexplained and Unknown
• Oops, getting off track here... What is the domain of Classical Mechanics (and Classical Physics)?