

## SECTION OVERVIEW

### Spiral Electricity and Magnetism (Calculus-Based)

Spiral Physics is a research based introductory physics curriculum developed at Monroe Community College. There are several important features of this curriculum. It integrates text and workbook activities in a modular fashion, and arranges topics so that students receive repeated exposure to concepts with increased complexity. It makes use of alternative problem types, including goal-less problem statements, ranking tasks, and critical analysis tasks. It restricts the equation set available for student use and is designed to facilitate active learning.

#### 1: Electric Fields

- 1.1: Concepts and Principles
- 1.2: Charge and Charge Density
- 1.3: Perfect Conductors and Perfect Insulators
- 1.4: Analysis Tools - Continuous Charge Distribution
- 1.4: Analysis Tools - Point Charges
- 1.6: Analysis Tools - Gauss's Law
- 1.7: Activities (The Electric Field)
- 1.E: Electric Fields (Exercises)

#### 2: Electric Forces

- 2.1: Concepts and Principles - The Gravitational Analogy
- 2.2: Analysis Tools - Point Charges
- 2.3: Analysis Tools - Force and Motion
- 2.4: Electric Fields and Cancer (Project)

#### 3: Magnetic Fields

- 01. Concepts and Principles
- 02. Analysis Tools
- 03. Analysis Tools 2
- 04. Activities

#### 4: Magnetic Forces

- 01. Concepts and Principles
- 02. Analysis Tools
- 03. Analysis Tools 2
- 04. Activities

#### 5: Electromagnetic Induction

- 01. Concepts and Principles
- 02. Analysis Tools
- 03. Activities

#### 6: Electric Potential

- 01. Concepts and Principles
- 02. Analysis Tools

03. Analysis Tools 2

04. Activities

## 7: Electric Circuits

01. Concepts and Principles

02. Analysis Tools

03. Analysis Tools 2

04. Activities

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## 8: Electromagnetic Waves

- 01. Concepts and Principles
- 02. Concepts and Principles 2
- 03. Analysis Tools
- 04. Analysis Tools 2
- 05. Activities

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