

## 12.0: INTRODUCTION

### OBJECTIVE

After completing this section, you should be able to recognize the various spectroscopic techniques used to identify and characterize organic compounds.

### KEY TERMS

Make certain that you can define, and use in context, the key term below.

- spectroscopy

### STUDY NOTES

The term spectroscopy is used to describe a number of techniques used by chemists to obtain information about the structure and bonding of chemical compounds. Four types of spectroscopy are described in the course:

1. mass spectroscopy (also called mass spectrometry, Chapter 12).
2. infrared spectroscopy (often simply called IR, Chapter 12).
3. nuclear magnetic resonance spectroscopy (usually referred to as NMR, Chapter 13).
4. ultraviolet spectroscopy (abbreviated UV, Chapter 14).

Of these four techniques, we shall spend the least time on ultraviolet spectroscopy, as it is much less powerful than the other three. If you do any reading on chemistry outside of the course materials, you will almost certainly see references to other spectroscopic techniques, such as Raman spectroscopy, electron spin resonance (ESR) spectroscopy, and atomic absorption (AA) spectroscopy. Even a description of these techniques and the information they can provide is beyond the scope of this course.

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