Chapter 1 – Scientific Understanding of Behavior
- Understand the uses of research
- Scientific approach versus intuition and authority as ways of knowing
- Describe the four goals of science, including the three types of evidence required to determine causes of behavior (that is, temporal precedence, covariation of cause and effect, and alternative explanations)
- Compare and contrast basic versus applied research

Chapter 2 – Where to Start
- Distinguish between a hypothesis and a prediction
- Explain the two functions of a theory
- Differentiate between sources of ideas
- The role of books, journals, literature reviews and other sources in the development of research ideas and developing an experiment. Be sure to understand the implications of using original research as a source of information as compared to other sources of information, such as books focusing on theory and literature reviews focusing on a broad-based review of a particular area.
- What are the pros and cons of internet searches?
- Understand the purpose of each part of a research article (abstract, introduction, methods, results & discussion)

Chapter 3 – Ethical Research
- Historical significance of the Belmont Report
- A clear understanding of the three ethical principles outlined in the Belmont Report. Pay careful attention to risks in psychological research, assessment of risks and benefits, and informed consent.
- Pros and cons of deception in research and how it relates to ethics
- Central tenants of debriefing. Why is a debriefing important? Is it essential?
- Understand the relationship between the Belmont Report and the APA ethics code for research with human participants (Ethical Standard 8)
- Understand APA ethical standards for animal research
- Ability to apply ethical standards for human research in a scenario
- Role of Institutional Review Boards in ethics decision making
Chapter 4 - Studying Behavior

- Understand the four general categories of variables
  - Situational, response, participant/subject, mediating

- Understand the difference between independent and dependent variables

- Ability to define and recognize examples of independent and dependent variables

- Explain operational definitions and develop such definitions

- Compare, contrast and explain positive linear, negative linear, and curvilinear relationships between two variables.

- Compare and contrast nonexperimental versus experimental methods. Specifically address the problems with nonexperimental methods (such as direction of cause/effect and confounding variables) and central features of the experimental method (such as experimental control and randomization).

- Understand when nonexperimental methods may be necessary and important to use.

- What are the main advantages of using multiple methods (experimental and nonexperimental) to study behavior?

- Differentiate among construct validity, internal validity and external validity. Why are each of these important and what aspects of the research project do they affect?

Chapter 5 - Measurement Concepts

- Understand what reliability is and be able to distinguish between true score and measurement error
  - Hint: Observed score = true score + measurement error

- Describe the methods of determining the reliability of a measure
  - Test-retest reliability, internal consistency reliability, split-half, interrater reliability

- Discuss the concept of construct validity and explain the indicators of construct validity (face validity and criterion-related validity)

- Explain the four types of criterion-oriented validity

- Why are reliability and validity important? What do they affect

- Reactivity of measures is a problem – why and what does it affect?

- Ability to explain and differentiate among the measurement scales
  - Nominal, ordinal, interval and ratio