DEPARTMENT: PSYCHOLOGY

PREPARED BY: PSYCHOLOGY DEPT.

DATE: FALL 2017

COURSE TITLE: Learning

COURSE CODE: PSY 301

CREDITS: 3

CONTACT HOURS: 45

CATALOG DESCRIPTION:

This course examines the principles and theories of learning including the methodology and evaluation of research pertaining to learning processes. Topics will include a broad range of learning paradigms, from relatively simple processes such as classical conditioning and operant conditioning, to more cognitively complex processes such as concept formation and schema development. The research describing information acquisition, transfer, and forgetting will be reviewed. In addition, the influence of conditions such as motivational factors, will be examined. Prerequisite(s): PSY 101. Credits: 3 (3,0)

PREREQUISITES: PSY 101, PSY 130 or PSY 131, or permission of the Department Chairperson

REQUIRED FOR: Applied Psychology Program

ELECTIVE FOR: All curricula with upper level social science electives.

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Behavioral Objectives

1. The student will acquire knowledge of current theories of learning processes.
2. The student will be familiar with the empirical basis for learning theories in terms of the major research studies on which the theories are based and their strengths and weaknesses.
3. The student will understand the historical context in which our current knowledge and theories of learning are based.
4. The student will obtain a sufficient understanding of the theoretical approaches to learning to apply them within their field of interest.
5. The student will understand the limitations of our knowledge of learning processes and will be familiar with the major issues being debated by researchers in the field.

COURSE OUTLINE

The following is an overview of the topics to be covered in this course. Each unit will include relevant theory, current research, and its application.

Unit 1: Introduction to learning
Learning is the process by which an activity is changed through reacting to an encountered situation. In this unit, the concept of learning is presented along with an overview of the characteristics of learning as contrasted with other influences of behavior such as native response tendencies, maturation, or temporary states of the organism. The variety of theoretical approaches that have contributed to our understanding of learning processes will be discussed. We will also explore general paradigms for measuring the learning process and the general issues that learning theorists must address.

Unit 2: Classical Conditioning
In simple learning paradigms, organisms come to associate one stimulus with another. The most famous of these approaches is Pavlov's classical conditioning. In this unit the basic principles of associative learning will be discussed. The factors that influence the ease with which associations are learned and how persistent the association becomes will be presented through a discussion of relevant research. Practical applications of classical conditioning to human learning and behavior will be discussed.
Unit 3: **Operant Conditioning**
Behavioral responses can come under control of reinforcing stimuli, both positive and negative. Skinner's operant conditioning is a well known approach to this form of learning. In this unit the basic principles of operant conditioning will be discussed. The factors that influence the rate and persistence of learned responses will be presented through a discussion of relevant research. Practical applications of operant conditioning to human learning and behavior will be discussed.

Unit 4: **Cognitive Theories**
In addition to learning associations between stimuli and between stimuli and responses, people learn complex concepts and information the enhances their ability to reason and adapt to the environment in intellectual ways. In this unit, cognitive theories on conceptual learning will be presented. Research on the learning of complex material such as symbolic logic, mathematics, and understanding of the physical world will be reviewed. In addition, cognitive phenomena such as concept formation, verbal learning, and observational learning will be discussed. The process of forgetting will be discussed in terms of theoretical approaches to explain this phenomenon. Practical applications of cognitive theories, e.g., to education, will be discussed.

Unit 5: **Mathematical Models**
A strong tradition in the study of learning in the United States has been to describe the results of learning experiments in precise mathematical models. Rather than representing new theories in their own right, mathematical learning theorists focused on explaining the results of experiments of other learning theories. In this unit, mathematical approaches to modeling learning will be presented. We will explore what is perhaps the most significant contributions of these efforts, the quantification of drive effects, stimulus sampling theory, and Markov models.

Unit 6: **Neurophysiological Theories**
Human behavior has a physiological basis and learning is no exception. Researchers interested in the neurophysiological aspects of learning are not content to describe the behavioral changes that occur with learning, they seek to explain the association at a deeper level based on physiological mechanisms. In this unit we will discuss research on the neurophysiological underpinnings of learning, including the physiological aspects of the nervous system involved in learning, physiological changes as a result of learning, postulated learning structures, and memory traces.