COURSE OUTLINE

ABAP 345 - APPLIED SCIENCE AND TECHNOLOGY OF BEHAVIOR

Prepared By: Dr. Stephen F. Ledoux
A. **TITLE:** Applied Science and Technology of Behavior

B. **COURSE NUMBER:** ABAP 345

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE:** No

E. **COURSE LENGTH:** 15 weeks face–to–face or asynchronous

F. **SEMESTER(S) OFFERED:** Fall or Spring

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**
   3 lecture hours per week

H. **CATALOG DESCRIPTION:**

   In this second of a two course sequence, common problematic human behaviors from a range of ordinary settings are analyzed along with the accessible independent variables of which these behaviors are a function as discovered by the natural science of behavior, behaviorology. Together, these are examined for prevention and solutions through the basic behavior/environment engineering applications that are derived from basic principles and techniques. Also considered are (a) the historical circumstances leading to these applications, (b) the value in design over accident or chance in the control of individual behavior and cultural practices, and (c) the place of ethics in considering and solving behavior problems.

I. **PRE-REQUISITES/CO-REQUISITES:**
   a. Pre-requisite(s): Introduction to the Science and Technology of Behavior (ABAP 245), or permission of instructor.
   
   b. Co-requisite(s): None

J. **GOALS (STUDENT LEARNING OUTCOMES):**
   By the end of this course, the student will be able to:

<table>
<thead>
<tr>
<th>Course Objective</th>
<th>Institutional SLO</th>
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<tbody>
<tr>
<td>a. Summarize ABC analysis and measurement methodology</td>
<td>2. Crit. Thinking</td>
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<td></td>
<td>3. Prof. Competence</td>
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<td>b. Demonstrate applying technologies to increase</td>
<td>3. Prof. Competence</td>
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<td>behavior frequency</td>
<td>4. Inter-Intrapersonal Skills</td>
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<tr>
<td>c. Demonstrate applying technologies to decrease</td>
<td>3. Prof. Competence</td>
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<tr>
<td>behavior frequency</td>
<td>4. Inter-Intrapersonal Skills</td>
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<tr>
<td>d. Evaluate historical developments and trends</td>
<td>1. Communication</td>
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<td>3. Prof. Competence</td>
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K. **TEXTS:**

- Part II of *Running Out of Time—Introducing Behaviorology to Help Solve Global Problems* by Dr. Stephen Ledoux.
- Part II of *Study Questions for Running Out of Time—Introducing Behaviorology to Help Solve Global Problems* by Dr. Stephen Ledoux.
- Supplemented by *Behaviorology Majors Make a Difference* by (assembler) Dr. Stephen Ledoux.
- Supplemented by other books and articles as appropriate.
  (See references).

L. **REFERENCES:**


M. **EQUIPMENT:** Smart classroom.

N. **GRADING METHOD:** A–F
O. MEASUREMENT CRITERIA/METHODS:
To be determined by the instructor.

Possibilities include but are not limited to:
• assigned homework completion
• research papers
• book reports
• group oral/written reports
• individual oral/written reports
• essays
• class participation
• projects
• journals
• quizzes
• tests
• exams

P. DETAILED COURSE OUTLINE:

I. ABC analysis and measurement methodology.
   A. Antecedent—behavior—consequence (ABC) analysis.
      1. Antecedent analysis.
      2. Behavior analysis.
      3. Consequence analysis.
   B. Measurement methodology.
      2. Behavior rates.
      3. Data reliability.
      4. Data graphing.
      5. Intervention evaluation.

II. Applying technologies to increase behavior frequency.
   A. Reinforcement.
      1. Defined.
      2. Law of effect.
      3. Types of reinforcers.
      4. Reinforcement procedures.
      5. Examples, rules, problems with reinforcement.
   B. Shaping.
      1. Defined.
      2. Shaping procedures.
      3. Examples, rules, problems with shaping.
   C. Chaining.
I. Defined.
2. Chaining procedures.
3. Examples, rules, problems with chaining.

III. Applying technologies to decrease behavior frequency.

A. Extinction.
1. Defined.
2. Extinction procedures.
3. Examples, rules, problems with extinction.

B. Differential reinforcement.
1. Defined.
2. Types of differential reinforcement.
3. Examples, rules, problems with differential reinforcement.

C. Punishment.
1. Defined.
2. Kinds of punishment.
3. Problematic popularity of punishment.
4. Examples, rules, problems using punishment.

IV. Applying technologies to establish and use stimulus control.

A. Stimulus evocation.
1. Defined.
2. Evocation training procedures.
3. Examples, rules, problems with stimulus evocation.

B. Prompting.
1. Defined.
2. Prompting procedures.
3. Examples, rules, problems with prompting.

C. Fading.
1. Defined.
2. Fading procedures.
3. Examples, rules, problems with fading.

V. Applying technologies for generalization and maintenance.

A. Generalization.
1. Defined.
2. Generalization training.
3. Examples, rules, problems with generalization.

B. Maintenance schedules.
1. Defined.
2. Examples, rules, problems with maintenance schedules.
3. Interactions of maintenance schedules and extinction.
VI. Applying technologies to change respondent behavior.
   
   A. Counterconditioning.
      1. Defined.
      2. Pavlovian procedures.
      3. Desensitization training.
      4. Sensitization training.
      5. Examples Examples, rules, problems with counterconditioning.
   
   B. Avoidance of aversives.
      1. Side effects of aversives.
      2. Alternatives to aversives.

VII. Ethics in applying behaviorological technologies.
   
   A. Ethics of behavior/environment engineering.
      1. Scientific input for ethics.
      2. Professional standards.
      3. Controls over practitioners.
      4. The right to effective treatment.
      5. The right to effective education.
   
   B. Future of environment/behavior engineering.
      1. Data on trends.
      2. Applications ready to go.
      3. Applications under development.

VIII. Historical developments and trends.
   
   A. Evolution of behavior science.
      1. Intellectual origins of behavior science.
      2. Contingencies developing behavior science.
   
   B. Infrastructure of behavior science.
      1. Behavior science community interactions.
      2. Behavior science cultural role.

IX. Introduction to self–control and complex cases.
   
   A. Self control.
      1. Voluntary behavior.
      2. Involuntary behavior.
      3. Techniques of self control.
      4. Multiple responses in self control.
      5. Problems in self control.
   
   B. Complex cases.
      1. Complexity and scientific foundations.
      2. Complexity and behavior science principles.
      3. Complexity and behavior science practices.
      4. Multiple independent variables.
      5. Multiple and responses.
7. Multiple effects.
9. Stimulus Equivalence Relations
10. Cultural practices.

Q. **LABORATORY OUTLINE:** No laboratory