1. **Catalog Description of the Course.** Include the course prefix, number, full title, and units. Provide a course narrative including prerequisites and corequisites. If any of the following apply, include in the description: Repeatability (May be repeated to a maximum of ___ units); time distribution (Lecture ___ hours, laboratory ___ hours); non-traditional grading system (Graded CR/NC, ABC/NC). Follow accepted catalog format.

**COMP 469. ARTIFICIAL INTELLIGENCE/ NEURAL NETS (3)**

Three hours of lecture in the lab per week.
Prerequisites: COMP 350 and COMP 362.
An exploration of the use of computers to perform computations normally associated with intelligence, pattern formation and recognition using various backprop iterations. Stacks, decision trees and other modern mining tools and computational models for knowledge representation will be covered. Other topics may include natural language and imagining.

2. **Mode of Instruction.**

<table>
<thead>
<tr>
<th>Hours per</th>
<th>Units</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>3</td>
<td><em><strong>1</strong></em>_</td>
</tr>
<tr>
<td>Seminar</td>
<td>____</td>
<td>________</td>
</tr>
<tr>
<td>Laboratory</td>
<td>____</td>
<td>________</td>
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<tr>
<td>Activity</td>
<td>____</td>
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</tr>
</tbody>
</table>

3. **Justification and Learning Objectives for the Course.** (Indicate whether required or elective, and whether it meets University Writing, and/or Language requirements) [Use as much space as necessary]

The course is an elective course for Computer Science majors.

Through this course, students will:

1. Be able to identify the basic components of human intelligence.
2. Be able to write computer programs that simulate basic board games and strategies.
3. Be able to analyze the components of a natural language interface.
4. Be able to analyze the components of a computer vision system.
5. Be able to analyze the logical structure of basic reasoning.
6. Be able to build, in software, a rule based system.
7. Be able to identify the components of a neural network.
8. Be able to apply a neural network to a a simple classification problem.
9. Be able to organize and express ideas clearly and convincingly in oral and written forms.

This course is not designed to satisfy the University Writing or Language requirements.

4. **Is this a General Education Course**

   **NO**

   If Yes, indicate GE category:

<table>
<thead>
<tr>
<th>A (English Language, Communication, Critical Thinking)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B (Mathematics &amp; Sciences)</td>
</tr>
<tr>
<td>C (Fine Arts, Literature, Languages &amp; Cultures)</td>
</tr>
<tr>
<td>D (Social Perspectives)</td>
</tr>
<tr>
<td>E (Human Psychological and Physiological Perspectives)</td>
</tr>
</tbody>
</table>

5. **Course Content in Outline Form.** [Be as brief as possible, but use as much space as necessary]

   1. Human Intelligence.
   2. Logical Reasoning.

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3. Formal Logic.
4. Natural Language Processing.
5. Computer Vision.
7. Neural Networks.

6. **References.** [Provide 3 - 5 references on which this course is based and/or support it.]

1. *Artificial Intelligence*, Rich and Knight  
   McGraw Hill  
   1991  
   0-07-100894-2

7. **List Faculty Qualified to Teach This Course.**

   Computer Science faculty with cooperation of Psychology faculty.

8. **Frequency.**
   a. Projected semesters to be offered:  
      Fall  ____X____  
      Spring  ___X___  
      Summer  ______

9. **New Resources Required.**
   a. Computer (data processing), audio visual, broadcasting needs, other equipment
      Use of existing computer lab.
   b. Library needs
      none
   c. Facility/space needs
      none

10. **Consultation.**
    Attach consultation sheet from all program areas, Library, and others (if necessary)

11. If this new course will alter any degree, credential, certificate, or minor in your program, attach a program modification.

________________________________________________________________________

Proposer of Course  
Date

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