

**CIIC 5015 - Course Syllabus**

**1. General Information:**

Alpha-numeric codification: CIIC 5015  
Course Title: Artificial Intelligence  
Number of credits: 3  
Contact Period: 3 hours of lecture per week

Equivalent Course: ICOM 5015

**2. Course Description:**

**English:** An Introduction to the field of artificial intelligence: LISP Language, search techniques, games, vision, representation of knowledge, inference and process of proving theorems, natural language understanding.

**Spanish:** Introducción al campo de la inteligencia artificial: lenguaje Lisp, técnicas de búsqueda, juegos, visión, representación del conocimiento, inferencia y proceso de prueba de teoremas, entendimiento de lenguaje natural.

**3. Pre/Co-requisites and other requirements:**

Prerequisites: CIIC 4020 or ICOM 4035

**4. Course Objectives:**

Students will learn the fundamental concepts of artificial intelligence and write programs that will provide them the ability to analyze and design intelligent systems.

**5. Instructional Strategies:**

- conference discussion computation laboratory
- seminar with formal presentation seminar without formal presentation workshop
- art workshop practice trip thesis special problems tutoring
- research other, please specify:

**6. Minimum or Required Resources Available:**

Students will use the Departmental computer laboratories to complete course projects.

**7. Course time frame and thematic outline**

Outline	Contact Hours
Introduction to AI	2
Programming in the LISP language	6
Problem representation and search techniques	6
Search in game trees	2
Vision: scene analysis and the blocks world	7
Knowledge representation techniques including logic and semantic networks	7
Natural language understanding: grammars, parsing and natural language processing systems	7
Application of AI in various fields	6
Exams and discussions	2
<b>Total hours: (equivalent to contact period)</b>	<b>45</b>

**8. Grading System**

<input checked="" type="checkbox"/> Quantifiable (letters) <input type="checkbox"/> Not Quantifiable
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**9. Evaluation Strategies**

	Quantity	Percent
<input checked="" type="checkbox"/> Exams	1	25%
<input checked="" type="checkbox"/> Final Exam	1	35%
<input checked="" type="checkbox"/> Short Quizzes	2-8	10%
<input checked="" type="checkbox"/> Oral Reports	1	5%
<input type="checkbox"/> Monographies		
<input type="checkbox"/> Portfolio		
<input checked="" type="checkbox"/> Projects	1	25%
<input type="checkbox"/> Journals		
<input type="checkbox"/> Other, specify:		
<b>TOTAL:</b>		<b>100%</b>

**10. Bibliography:**

1. Stuart Russell and Peter Norvig, *Artificial Intelligence: A Modern Approach*, 3rd ed., Prentice Hall, 2009.
2. Kevin Warwick, *Artificial Intelligence: The Basics*, Routledge, 2011.
3. Stephen Lucci and Danny Kopec, *Artificial Intelligence in the 21st Century*, Mercury Learning, 2012.
4. Nils J Nilsson, *Artificial Intelligence: A new Synthesis*. Morgan Kauffman, 1998. [Classic Book] [Available at the Circulation Collection (Q335 .N495 1998), UPRM General Library]

**11. Course Outcomes**

Upon completion of this course the student will be able to:	<a href="#">Program Student Outcomes Impacted</a>
1. apply trees and graphs to represent solutions to problems in games, decision-making scenarios, and natural language processing.	6
2. design, analyze, and implement search and planning algorithms to explore tree-based and graph-based solution spaces in AI problems.	1, 2
3. apply knowledge representation techniques including semantic networks, propositional logic, first-order logic, and uncertain reasoning techniques to implement expert systems.	6
4. design and analyze predictive algorithms using neural networks, and other contemporary machine learning techniques.	2
5. implement AI algorithms using functional, and logic programming languages.	6

**12. According to Law 51**

Students will identify themselves with the Institution and the instructor of the course for purposes of assessment (exams) accommodations. For more information please call the Student with Disabilities Office which is part of the Dean of Students office (Office #4) at (787)265-3862 or (787)832-4040 extensions 3250 or 3258.

**13. Academic Integrity**

-The University of Puerto Rico promotes the highest standards of academic and scientific integrity. Article 6.2 of the UPR Students General Bylaws (Board of Trustees Certification 13, 2009-2010) states that academic dishonesty includes, but is not limited to: fraudulent actions; obtaining grades or academic degrees by false or fraudulent simulations; copying the whole or part of the academic work of another person; plagiarizing totally or partially the work of another person; copying all or part of another person answers to the questions of an oral or written exam by taking or getting someone else to take the exam on his/her behalf; as well as enabling and facilitating another person to perform the aforementioned

behavior. Any of these behaviors will be subject to disciplinary action in accordance with the disciplinary procedure laid down in the UPR Students General Bylaws.—