UNIVERSITY OF THE FRASER VALLEY

OFFICIAL UNDERGRADUATE COURSE OUTLINE (page 1)

COURSE IMPLEMENTATION DATE: January 2004
COURSE REVISED IMPLEMENTATION DATE: September 2010
COURSE TO BE REVIEWED: January 2014
(four years after UPAC approval) *(month, year)*

OFFICIAL UNDERGRADUATE COURSE OUTLINE INFORMATION

Students are advised to keep course outlines in personal files for future use.
Shaded headings are subject to change at the discretion of the department – see course syllabus available from instructor

CIS 380	**Computer Information Systems**	**3**
COURSE NAME/NUMBER	FACULTY/DEPARTMENT	UFV CREDITS

Introduction to Artificial Intelligence
COURSE DESCRIPTIVE TITLE

CALENDAR DESCRIPTION:

This course provides a basic introduction to the field of Artificial Intelligence. Topics covered will include the most common AI techniques, including knowledge representation and reasoning, logical inference, and machine learning. Emphasis is placed on the practical use of rule-based systems and the fundamentals necessary for the development of Expert Systems.

PREREQUISITES: Acceptance to CIS degree program. (Students accepted to a CIS or Computing Science minor may register with permission of the department.)
As of September 2011, prerequisites will change to the following:
Acceptance to CIS degree program, COMP 251, and one of the following: MATH 106; MATH 104 with a grade of B+ or better; CYC 425; or PSYC 110 with a grade of B+ or better. (Students accepted to a CIS or Computing Science minor may register with permission of the department.)

COREQUISITES:
PRE or COREQUISITES:

SYNONYMOUS COURSE(S):
(a) Replaces:
(b) Cross-listed with:
(c) Cannot take: for further credit.

SERVICE COURSE TO: *(department/program)*

TOTAL HOURS PER TERM: **45**

STRUCTURE OF HOURS:

Lectures:	**45**	Hrs
Seminar:		Hrs
Laboratory:		Hrs
Field experience:		Hrs
Student directed learning:		Hrs
Other (specify):		Hrs

TRAINING DAY-BASED INSTRUCTION:
Length of course:
Hours per day:

OTHER:
Maximum enrolment: **35**
Expected frequency of course offerings: Once per year
(every semester, annually, every other year, etc.)

WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only)	☐ Yes	☐ No
WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department)	☒ Yes	☐ No
TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE:	☐ Yes	☒ No

Course designer(s): **Duncan Jeffries**

Department Head:	**Ora Steyn**	Date approved:	**September 18, 2009**
Supporting area consultation (Pre-UPAC)		Date of meeting:	**November 6, 2009**
Curriculum Committee chair:	**Edward Lo**	Date approved:	**September 18, 2009**
Dean/Associate VP:	**Dan Ryan**	Date approved:	**January 18, 2010**
Undergraduate Program Advisory Committee (UPAC) approval		Date of meeting:	**January 29, 2010**

LEARNING OUTCOMES:

Upon successful completion of this course, students will be able to:
• Compare the difference between AI and traditional computer information systems
• Show that they know the major benefits and limitations of Expert Systems
• Describe the process of knowledge acquisition and validation
• Describe Knowledge representation and its importance to AI
• Describe the importance of inferences, explanations, and uncertainty in AI
• Design and build a simple expert system
• Define Neural computing, Genetic Algorithms, and Fuzzy Logic
• Define intelligent agents and their role in modern software

METHODS: *(Guest lecturers, presentations, online instruction, field trips, etc.)*

Lectures, assignments, and hands-on exercises working with Expert Systems software.

METHODS OF OBTAINING PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

☒ Examination(s) ☒ Portfolio assessment ☒ Interview(s)

☐ Other (specify):

☐ PLAR cannot be awarded for this course for the following reason(s):

TEXTBOOKS, REFERENCES, MATERIALS:

[Textbook selection varies by instructor. An example of texts for this course might be:]

Artificial Intelligence: A Modern Approach by S. Russell and P. Norvig

SUPPLIES / MATERIALS:

CD for assignments and project.

STUDENT EVALUATION:

[An example of student evaluation for this course might be:]

Assignments	30%
Midterm	35%
Final	35%

COURSE CONTENT:

[Course content varies by instructor. An example of course content might be:]

• Artificial vs. Natural Intelligence
• Knowledge acquisition and validation
• Machine reasoning, inferencing with rules, representing uncertainty
• Building expert systems
• Neural Network fundamentals
• Genetic Algorithms, fuzzy logic, and Hybrid Intelligent systems
• Intelligent Agents
• Speech recognition and understanding
• Computer Vision
• Robotics