



University: *Fayoum University*
 Faculty: *Computers and Information*
 Department: *Information Systems*

Course Specification

1- Basic Information		
Code: CSC 352	Course Title: Logic Programming	Year/Level: Third year – First term
Programme: B.Sc degree in Information Systems	Number of units:	Lecture: 3 hrs/ week
		Tutorial: 0 hrs/ week
		Practical: 3 hrs/ week

2- Aims of Course:	<p>The objective of the course is to impart the student the profound theoretical and practical knowledge required for professional practice in the field, to give him a survey of the individual disciplines of computational logic and to develop his ability to work according to scientific methods. In addition, the student is given the opportunity to plan his studies to fit a particular practical application. To acquire practice-oriented knowledge he may choose appropriate combinations of subjects. The course will cover the following areas: mathematical logic, deduction systems, logic programming, formal methods in software development, formal methods of hardware design, semantics and logical foundations of programming languages, deductive databases, logical foundations of cognitive systems, logical foundations and semantics construction in language processing.</p>
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3- Intended Learning Outcomes	
A- Knowledge and Understanding:	<p>A4 Explain essential concepts, principles, and theories related to computer science such as operating system. A9 Identify programming fundamentals and languages, algorithms analysis, and data structures. A10 Identify and explain the fundamental concepts, principles, and techniques needed for the analysis, development, validation, verification, deployment, and operations of computer-based systems.</p> <p>On completing the course, students should have: a1) A good understanding of the fundamental principles of logic. a2) An understanding of the skills for programming logic</p>
B- Intellectual Skills:	<p>B3 Generate and evaluate a range of innovative design patterns and solutions to solve a computer science problem containing a range of commercial and industrial constraints.</p>

	<p>B10 Generate innovative designs to solve a problem containing a range of commercial and industrial constraints.</p> <p>On completing the course, students should be able to know:</p> <p>b1) How to think in logic and the different theories and deduction.</p> <p>B2) How to think in logic programming mechanisms and controls</p>
<p>C- Professional and Practical Skills:</p>	<p>C9 : Deploy different modeling techniques to model and analyze real life computing problems.</p> <p>On completing the course, students should be able to:</p> <p>c1) Deal with the logical foundations and semantics construction in language processing</p>

<p>4-Course Content:</p>	<ol style="list-style-type: none"> 1. Introduction: Facts, objects, 2. Predicates: Expressing facts, turbo prolog objects. 3. Prolog variables: Using variables, bound and free variables, anonymous variables, 4. Compound goals, backtracking, variable rules. 5. Using rules: Rules, variables in rules, prolog execution rules, using the trace, 6. Unification, execution control, the built-in predicate. Simple input and output. 7. Controlling execution: Success through failure; the fail predicate, 8. Exclusion using the fail predicate, recursion, and the cut. Arithmetic operations. 9. Compound objects Dynamic database. Lists. String operations.
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<p>5- Teaching and Learning Methods:</p>	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Computer-lab Sessions 4. Practical lab work 5. Class discussions 6. Independent Work 7. Group projects 8. Problem-based Learning
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<p>6- Teaching and Learning Methods for handicapped students :</p>	<p>-</p>
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<p>7- Student Assessment</p>	
<p>A- Assessment Methods:</p>	<ol style="list-style-type: none"> 1. Assignments and Quizzes

	2. Midterm written exam 3. Practical exam 4. Final written exam
B- Assessment schedule:	Midterm Examination: Week 7 Practical examination Week 13 Oral Examination: Week 14 Final Examination: Week 15
C- Weighting of assessments:	Assignments and Quizzes: 10% Mid-Term Examination: 10% Practical Examination: 15% Final-term Examination: 65%

8- Books and References	
A- Notes:	-
B- Essential Books (Text Books):	Logic programming with Prolog by M A Bramer (2013)
C- Recommended Books:	<ul style="list-style-type: none"> ▪ Marvin K. Nakayama, "Introduction to Logic and Automata". (2003)
D- Periodicals, Web sites, ... etc	-

Course Professor: Dr. Halla Abdel Hameed Department Head: Dr Amera Idres

Course Content Intended Learning Outcomes Matrix

Course Title: Logic Programming

Course Code: CSC 352

Course Content	Week	Knowledge & Understanding		Intellectual Skills		Professional & Practical Skills
		a1	a2	b2	b2	c1
1. Introduction: Facts, objects,	1	x		x		
2. Predicates: Expressing facts, prolog objects.	2:3	x		x		x
3. Prolog variables: Using variables, bound and free variables, anonymous variables,	4	x	x			
4. compound goals, backtracking, variable rules.	5	x	x	x	x	
5. Using rules: Rules, variables in rules, prolog execution rules, using the trace,	6	x	x	x	x	x
6. unification, execution control, the built-in predicate. Simple input and output.	7	x	x	x	x	x
7. Controlling execution: Success through failure; the fail predicate,	8	x			x	x
8. exclusion using the fail predicate, recursion, and the cut. Arithmetic operations.	9	x	x	x		x
9. Compound objects Dynamic database. Lists. String operations.	10:11	x	x			x

Course coordinator: Dr. Hala abdel Hameed

Head of Department: Dr. Amira Idrees.