



Course Specifications of

Logic programming – CS313P – 2017/2018

University: Mansoura University

Faculty: Computer and Information Sciences

Program on which the course is given: Department of Computer Science- Third year

Department offering the course: Department of Computer Science

Academic year/ Level: Third Year

Date of specification approval:

A- Basic Information

Title : Logic programming

Code : CS313P

Credit Hours : 3 **Lecture :** 1 **Tutorial :** **Practical :**

B- Professional Information

1- Overall Aims of the Course

This course aims to:

- Formalizes students with the logic programming paradigm and its programming techniques.
- Allow students to formalize logical natural language sentences and convert it to logical models.
- Allow students to apply reasoning procedures for several logic languages.
- Students should be familiar with the declarative style of programming languages

2- Intended Learning Outcomes of the course (ILOs)

By completing this course successfully, the student will be able to:

a- Knowledge and Understanding

- a1. Essential facts, concepts, principles and theories relating to computing and information and computer applications as appropriate to the program of study.
- a3. Tools, practices and methodologies used in the specification, design, implementation and evaluation of computer software systems.
- a13. Understand the essential mathematics relevant to computer science.
- a14. Use high-level programming languages.

b- Intellectual Skills

- b1. Analyze computing problems and provide solutions related to the design and construction of computing systems.
- b2. Realize the concepts, principles, theories and practices behind computing and information as an academic discipline.
- b4. Analyze, propose and evaluate alternative computer systems and processes taking into account limitations, and quality constraints.
- b5. Make ideas, proposals and designs using rational and reasoned arguments for presentation of computing systems.
- b10. Define traditional and nontraditional problems, set goals towards solving them, and observe results.
- b11. Perform comparisons between (algorithms, methods, techniques...etc).
- b13. Identify attributes, components, relationships, patterns, main ideas, and errors.
- b14. Summarize the proposed solutions and their results.
- b16. Establish criteria, and verify solutions.
- b17. Identify a range of solutions and critically evaluate and justify proposed design solutions.

c- Professional and Practical Skills

- c1. Operate computing equipment, recognizing its logical and physical properties, capabilities and limitations.

d- General and Transferable Skills

- d1. Demonstrate the ability to make use of a range of learning resources and to manage one's own learning.

3- Contents

No	Course Content	Lecture	Tutorial	Total
1	Introduction to the fundamental concepts of Human Logic ,Reasoning types, and Logic Applications	2	2	4
2	Propositional logic and it's reasoning procedures	4	4	8
3	First order logic and it's reasoning procedures	6	6	12
4	Reasoning based on resolution principle	4	4	8
5	Introduction to the fundamental concepts of declarative programming language	2	2	4
6	Prolog programming language and it's applications	6	6	12
Total Hours		24	24	48

4- Assessment Schedule

Assessment Method	No.	Description	Week No.	Weight (%)
Assignment	1	Home work no. 1	3	10
Written Exams	2	Midterm Exam	7	10
Assignment	3	Home work no. 2	8	10
Oral Exam	4	Oral questions	10	10
Written Exams	5	Final Exam	14	60
Total				100

5- List of references

5.1 Course Notes

- Lecture handouts delivered to students at the end of each lecture.

5.2 Essential Books (Text Books)

- Introduction to Logic, Second Edition, Michael Genesereth,
- Prolog Programming A First Course , Paul Brna

6- Facilities Required for Teaching and Learning

- Data show.

Course Content/ILO Matrix

Course Content	a1	a3	a13	a14	b1	b2	b4	b5	b10	b11	b13	b14	b16	b17	c1	d1
Introduction to the fundamental concepts of Human Logic ,Reasoning types, and Logic Applications	•	•				•									•	
Propositional logic and it's reasoning procedures		•	•	•				•	•			•	•			•
First order logic and it's reasoning procedures		•	•	•				•	•			•	•			•
Reasoning based on resolution principle		•	•	•				•	•			•	•			•
Introduction to the fundamental concepts of declarative programming language	•	•		•	•	•	•		•	•	•			•	•	•
Prolog programming language and it's applications	•	•		•	•	•	•		•	•	•		•	•	•	•

Learning Method/ILO Matrix

Course Content	a1	a3	a13	a14	b1	b2	b4	b5	b10	b11	b13	b14	b16	b17	c1	d1
Lectures	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Tutorials			•	•	•	•	•	•	•	•	•	•	•	•	•	•

Assessment Methods/ILO Matrix

Assessment	a1	a3	a13	a14	b1	b2	b4	b5	b10	b11	b13	b14	b16	b17	c1	d1
Assignment			•	•				•	•	•	•	•	•	•	•	•
Midterm Exam	•	•	•	•	•	•	•	•					•	•		
Oral exam	•	•		•		•		•		•	•		•	•		
Final Exam	•	•	•	•	•	•	•	•	•					•		

Course Coordinator: Dr. Taher Hamza
 Dr. Eslam Foad
Head of Department: Dr. Samir Elmogy
Date: