Course Description Form

1. Course Name
Intelligent Search Techniques

2. Course Code
`CSCL`**3230**

3. Semester / Year
Second Semester

4. Description Preparation Date
18/2/2024

5. Available Attendance Forms:
Theoretical and practical presence

6. Number of Credit Hours (Total) / Number of Units (Total)
30 Hours theoretical and 30 Hours practical/ 3 units

7. Course administrator's name (mention all, if more than one name)
Name: Dr. Suhad Malallah Kadhem **Email: suhad.m.kadhem@uotechnology.edu.iq**

8. Course Objectives

Course Objectives	• **Enabling the student to learn and understand some important methods and strategies for searching in the field of artificial intelligence.** • **Enabling the student to learn search control strategies** • **Enabling the student to learn the basics of expert systems** • **Enabling the student to program search algorithms using the artificial intelligence language (Prolog language)**

9. Teaching and Learning Strategies

Strategy	1- **Methodological books, resources (internet and library), lectures reinforc with illustrative examples.** 2- **Theoretical lectures, laboratories, practical tasks, using modern equipmen present practical ideas to students (data show, electronic board).**

3- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical 2 practical	1,3,5,6,7	**Intelligent search strategies (problem state space, Explain**	**Classroom and Laboratory**	Attendance & answering discussion

			Salesman problem and how to solving it)		questions
2	2 Theoretical 2 practical	1,3,5,6,7	**Blind search (Depth First Search Algorithm)**	**Classroom and Laboratory**	**Attendance & answering discussion questions**
3	2 Theoretical 2 practical	1,3,5,6,7	**Blind search (Breadth First Search Algorithm)**	**Classroom and Laboratory**	**Attendance & answering discussion questions**
4	2 Theoretical 2 practical	1,3,5,6,7	**Heuristic search (Hill Climbing Algorithm)**	**Classroom and Laboratory**	**Attendance & answering discussion questions**
5	2 Theoretical 2 practical	1,3,5,6,7	**Heuristic search (Best First Search Algorithm)**	**Classroom and Laboratory**	**homework**
6	2 Theoretical 2 practical	1,3,5,6,7	**Heuristic search (A Search Algorithm)**	**Classroom and Laboratory**	**Quiz**
7	2 Theoretical 2 practical	1,3,5,6,7	**Heuristic search) A* Search Algorithm(**	**Classroom and Laboratory**	**Attendance & answering discussion questions**
8	2 Theoretical 2 practical	1,3,5,6,7	**Using Heuristics in Games (8-puzzle game)**	**Classroom and Laboratory**	**homework**
9	2 Theoretical 2 practical	1,3,5,6,7	**Using Heuristics in Games (Tic-Tac-Toe game)**	**Classroom and Laboratory**	**Attendance & answering discussion questions**
10	2 Theoretical 2 practical	1,3,5,6,7	**Adversarial search in game playing (Min-max Algorithm & Alpha – Beta Algorithm).**	**Classroom and Laboratory**	**Attendance & answering discussion questions**
11	2 Theoretical 2 practical	1,3,5,6,7	**And / Or graph**	**Classroom and Laboratory**	**Attendance & answering discussion questions**
12	2 Theoretical 2 practical	1,3,5,6,7	**Control strategies**	**Classroom and Laboratory**	**homework**
13	2 Theoretical 2 practical	1,3,5,6,7	**Expert system**	**Classroom and Laboratory**	**Attendance & answering discussion questions**
14	2 Theoretical 2 practical	1,3,5,6,7	**discussions**	**Classroom and Laboratory**	**Attendance & answering discussion questions**
15	2 Theoretical 2 practical	1,3,5,6,7	**exam**	**Classroom and Laboratory**	**The correct answers**

4- Course Evaluation	
exams **daily duties** **Attendees** **Class activity**	

5- Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	**1.** Elian Rich, "Artificial Intelligence",1991. **2.** Luger E.George,"Artificial Intelligence Structures and Strategies ", 2005
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	