Course No.:  50901404        Course Name: Intelligent Application
Academic Year: 2018-2019        Time Division: 4hr. Theoretical 2hr. Practical. 2hr

**Course Description(4  credit hours)**

The definition and introduction of Intelligent Application.

**Course Intended Outcomes:**

Upon completion of the course, the student should be able to:

Define Intelligent Application in computer and he can process the Intelligent Application as a tool to improve an Intelligent and soft computing algorithms that generated by a computer.

**Course Outline:**

| Week | Description depends on the Timing table (Theoretical & Practical) |
|------|------------------------------------------------------------------|
| 1 | • Introduction to Expert system |
| 2 | • Typical Architecture of Expert system and application it. |
| 3 | • Introduction Artificial neural network (ANN) |
| 4 | • Theory of Neural Networks (NN) |
| 5 | • type of learning |
| 6 | • Typical Architecture of NN |
| 7 | • Basic Activation Functions |
| 8 | • The bias |
| 9 | • Exam |
| 10 | • Learning Algorithms |
| 11 | • Hebbian Learning Rule |
| 12 | • widrow-Hoff Learning Rule |
| 13 | • exam |
| 14 | • Genetic Algorithm (GA) |
| 15 | • Exam |
| | The second semester |
| 16 | • Genetic Programming (GP) |
| 17 | • Evolution strategy |
| 18 | • Genetic strateagy |
| 19 | • exam |
| 20 | • introduction of fuzzy logic |
| 21 | • fuzzy logic steps |
| 22 | • fuzzy sets |
| 23 | • fuzzy logic application |
| 24 | • exam |
| 25 | يبدا التطبيق في المدارس |

| | |
|---|---|
| 26 | - |
| 27 | - |
| 28 | - |
| 29 | - |
| 30 | - |
| 31 | FINAL EXAM Durations |

### Textbooks:

1. Simon Haykin, 2008," Neural Networks and learning machines" ($3^{th}$ edition), pearson.
2. McGraw Hill, Tom Mitchell, 1997, "Machine Learning".
3. Laurene Fausett, Fundamantals of Neural Networks: Architecture, Algorithms, and Application".

### Suggested references:

1. Internet

### Marking:

| First semester | | | | Second semester | | | | Final exam |
|---|---|---|---|---|---|---|---|---|
| 1st exam | $2^{nd}$ exam | practical | activity | $1^{st}$ exam | $2^{nd}$ exam | practical | activity | 10/practical |
| 5 | 5 | 5 | 3 | 5 | 5 | 5 | 3 | 50/Theoretical |

### Assignments and/or Projects:

| Assignment/Project | Description | Due Date | Marking |
|---|---|---|---|
| **homework** | There are 2 homework in the 2 semesters | During the course | 4 |

### Instructor information:

Instructor's Name:
- Instructor's Name: Iman Hussein Raheem

### NOTES:

- Office Hours: Other office hours are available by appointment.
- The content of this syllabus not be changed during the current semester.

Lecturer Signature          Chairman Signature