Dept Number	**CS 437**	**Course Title**	**Intelligent Systems and Soft Computing**
Semester Hours	**3**	**Course Coordinator**	**Shahram Rahimi**
Catalog Description	An introduction to the field of computer intelligence and soft computing. It covers rule-based expert systems, fuzzy expert systems, artificial neural networks, evolutionary computation, and hybrid systems. Students will develop rule-based expert systems, design a fuzzy system, explore artificial neural networks, and implement genetic algorithms.		

Textbooks

Artificial Intelligence: A guide to Intelligent Systems, 2nd edition, Michael Negnevitsky, Addison Wesley, 2005.

References

Course Learning Outcomes

- To obtain the theoretical and practical knowledge for design and development of basic intelligent systems
- To study soft computing technologies

Assessment of the Contribution to Program Outcomes

Outcome →	1	2	3	4	5	6	7	8	9	10
Assessed →	X	X	X	X	X	X				

Prerequisites by Topic

330 with a grade of *C* or better.

Major Topics Covered in the Course

1. Introduction to Intelligent Systems {3 classes}
2. Rule-Based Expert Systems {4 classes}
3. Introduction to Expert Systems Programming {4 classes}
4. Uncertainty Management in Rule-Based Expert Systems {5 classes}
5. Fuzzy Expert Systems {6 classes}
6. Frame-Based Expert Systems {2 classes}
7. Artificial Neural Networks {5 classes}
8. Evolutionary Computation {5 classes}
9. Hybrid Intelligent Systems {3 classes}
10. Knowledge Engineering and Data Mining {3 classes}