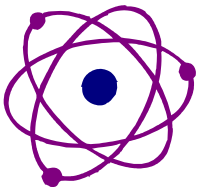
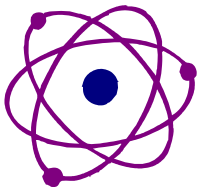


ECEN 5773
Computational Intelligence
Fall 2005
Syllabus



Time: Tuesday/Thursday 10:30-11:45 AM

Place: Engineering South 212

References:

Genetic Algorithms in Search, Optimization & Machine Learning
Goldberg, Addison-Wesley, 1989
An Introduction to Genetic Algorithms
Mitchell, MIT, 1996
Ant Colony Optimization
Dorigo and Stutzle, MIT, 2004
Multi-Objective Optimization Using Evolutionary Algorithms
Deb, John Wiley, 2001
Biomimicry for Optimization, Control and Automation
Passino, Springer, 2004

Instructor:

Professor Gary G. Yen,
http://www.okstate.edu/elec-engr/faculty/yen
744-7743, gyen@okstate.edu
Engineering South 404
Office Hours: Tuesday/Thursday 3:00PM-5:00PM;
or by appointment only

Objectives:

An overview of emerging biologically motivated computational intelligence paradigms and hand-on working knowledge with specific application domains and with focus on evolutionary algorithms: Topics include, but not limited to,

- computational intelligence
- simulated annealing;
- introduction to evolutionary computation;
- ant colony system;
- particle swarm intelligence;
- genetic algorihms (search operators, search schemes, niching, constraint handling,
- genetic programming;
- evolutionary strategy;
- co-evolution
- social based algorithm;
- evolutionary multiobjective optimization
- learning classifier systems
- theoretical analysis

Grading:

Homework Assignments on each subject covered	**30%**
Midterm Project 1: biological paradigms	**20%**
Midterm Project 2: novel applications	**20%**
Final Exam: proposal, final report, and oral presentation	**30%**

A-85% above; **B**-76%-85%; **C**-66%-75%; **D**-56%-65%; **F**-55% below

Drop and Add:

The instructor will follow University, College and Departmental guidelines for drops and adds.

Consult the class schedule book or Ms. Helen Daggs (744-9915) in Engineering South 202 for more information.

Attendance:

Students will be expected to attend class. Habitual failure to do so will result in a reduced grade. Class attendance is taken occasionally for reference.

An incomplete grade will only be given when a student misses a portion of the semester because of illness or accident. All (I) grades must be completed within thirty days.

Academic Dishonesty:

Cheating on homework, quizzes or examinations, plagiarism and other forms of academic dishonesty are serious offenses and will subject the student to serious penalties.

On the first instance of academic dishonesty, the student will receive a grade of zero for the assignment, quiz or examination, and a letter will be placed in the student's academic file for permanent record. The second instance will result in a grade of "F" for the course.

Disability Impairment:

If any member of the class feels that he/she has a disability and needs special accommodations of any nature whatsoever, the instructor will work with you and the University Office of Disabled Student Services to provide reasonable accommodations to ensure that you have a fair opportunity to perform in this class. Please advise the instructor of such disability and the desired accommodations at some point before, during, or immediately after the first scheduled class period.

Class Website:

You are advised to check on class website at http://www.okstate.edu/elec-engr/faculty/yen/fall05.html regularly for important information, such as handouts, homework assignments, schedule changes, old exams and etc.