Attention!

This is a *representative* syllabus.

The syllabus for the course when you enroll may be **different**.

Use the syllabus provided **by your instructor** for the most up-to-date information. Please refer to your instructor for more information for the specific requirements for a given quarter.

CSE/ECE 779 - Winter 2011

Introduction to Neural Networks

Time/Place: TR 9:30am - 10:48pm, 422 Botz Hall

Instructor: Prof. DeLiang Wang, 598 Dreese Lab; Phone: 292-6827;
Email: dwang@cse.ohio-state.edu

Office Hours: M 2:00pm - 3:30pm and R 1:00pm - 2:00pm

Grader: Kun Han

Course Description: A survey of fundamental methods and techniques of the field of neural networks. Single- and multi-layer perceptrons; radial-basis function networks; support vector machines; recurrent networks; supervised and unsupervised learning; application to pattern classification and function approximation problems.

Prerequisite: CSE 630, or ECE 600/662

Text (required): "Neural networks and learning machines," by Simon Haykin. Pearson, 2009

Class Project: There will be two class projects. Each student is required to write programs to implement two of the neural network models studied in the class. Each student needs to turn in a report for each programming assignment, which summarizes what has been done. More detailed information will be provided in due time.

Grading Plan: Homework: 18% (3 x 6%), Midterm: 22%,
Final exam: 30%, Class project: 30% (2 x 15%)

Policy:

Homeworks and projects are due at the beginning of class (9:30AM). Late projects result in a 10% penalty each calendar day. Excuse from scheduled exams or late homework will not be accepted without substantial documentation. Cell phones must be turned off during the class.

Tentative Schedule

Week	Topics:	Readings
Week 1:	Introduction and McCulloch-Pitts networks	Intro., Ch. 1
Week 2:	Perceptrons	Ch. 1
Week 3:	Regression and least mean square algorithm	Ch. 2, Ch. 3
Week 4:	Multilayer perceptrons	Ch. 4
Week 5:	Multilayer perceptrons: Continued	Ch. 4
Week 6:	Radial-basis function networks (**Midterm week**)	Ch. 5
Week 7:	Radial-basis function networks: Continued	Ch. 5
Week 8:	Support vector machines	Ch. 6
Week 9:	Support vector machines: Continued	Ch. 6
Week 10:	Unsupervised learning and self-organization	Ch. 9

Finals Week: **Final Exam:** 9:30 to 11:18, Monday, March 14