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Texts: SD372 Course Notes, Available in DC Copy Centre.  
SD675 Course Notes, Available in DC Copy Centre.  
*Pattern Classification*, Duda, Hart, & Stork, 2001 (library reserve)

References: *Pattern Recognition*, R. Schalkoff, 1992  
*Probability, Statistics, & Stochastic Processes*, A. Papoulis, 1991  
Suggested reading and library reserve list on home page

Home Page: <http://ocho.uwaterloo.ca/~pfieguth/Teaching/teaching.html>

Class Times: Mondays, Wednesdays, 10:30–11:50

Grad students are encouraged to attend SD372 – MWF 1:30-2:20, E2-1303A

### Course Grading:

1. Short laboratory / Matlab projects / Problem sets: I will hand out a total of 4 or 5 short Matlab / analytical tasks which relate to pattern recognition to give you an opportunity to apply material discussed in the course. These will be done individually. 40% of term mark.
2. Term project: This is the most significant component of the term's effort. The range of possible project topics is broad; I will be suggesting ideas and good journals to look at. The project can involve a critical review of recent papers in the literature, or a computer analysis and simulation of some topic of interest (perhaps in your research area).

5% of grade: Project proposal (< 1 page) due by end February

5% of grade: Brief (5 minute) in-class seminar, end of March

5% of grade: One page (two sided) handout along with in-class seminar, end of March

45% of grade: Course project, due mid/late April

### Tentative Course Outline: (subject to change, as with all grad courses)

1. Introduction, Overview
2. Statistical pattern recognition
3. Classification analysis and error bounds
4. Statistical hypothesis testing
5. Poisson counting processes
6. Estimation and error bounds
7. Information theory
8. Neural networks
9. Syntactical pattern recognition and Grammars