Carnegie Mellon University
Department of Electrical and Computer Engineering

18-794 **Pattern Recognition Theory** **Spring 1999**

Prof. Vijayakumar Bhagavatula

Course Information

Instructor: Professor Vijaya Kumar, HH B208, kumar@ece.cmu.edu
X8-3026, Office Hours: Monday and Wednesday, 1:00-2:00 pm

Secretary: Marlene Layton, HH A305, marlene@ece.cmu.edu, X8-3896

Teaching Assistant: Mohamed Alkanhal, HH A311, alkanhal@ece.cmu.edu, x8-2976
Office Hours: TBA

Class Hours: Monday and Wednesday, 10:30 am - 12:20 pm

Class Room: Scaife Hall 212

Textbook: No formal textbook is assigned, but notes will be provided. Also, following books should be available in the *Reserve* Section of the E&S Library.

- R.O. Duda & P.E. Hart, *Pattern Classification and Scene Analysis*, Wiley, 1973.
- K. Fukunaga, *Introduction to Statistical Pattern Recognition*, 2nd Edition, Academic Press, 1990.

Course Topics:

- Overview of Pattern Recognition (1 Lecture)
- Review of Vectors and Matrices (2 Lectures)
- Review of Random Variables and Processes (3 Lectures)
- Minimum Error Classifiers (4 Lectures)
- Parameter Estimation (3 Lectures)
- Non-parametric Methods (3 Lectures)
- Linear Discriminant Functions (3 Lectures)
- Supervised and Unsupervised Learning (3 Lectures)
- Feature Selection (2 Lectures)
- Artificial Neural Networks for Pattern Recognition (2 Lectures)

Examinations: There will be two 2-hour mid-term tests (during the class times on 02/24/99 and 04/05/99) and one final 3-hour examination (time and place to be announced by the registrar). All tests are open-book tests. Make-up exams will not be given except for medical emergencies.

Homework: A total of 8 homework assignments are being planned. While discussion of course-related concepts with other students is encouraged, the work you turn in must be your own. Copying other's homework is considered as cheating and will be dealt with severely.

Project: A project will be assigned towards the end of 02/99. This project will involve either developing software or carrying out literature survey and writing a survey article. More details will be forthcoming.

Discussion Group: There will be a class Bboard to facilitate the rapid communication/ exchange of course-related information. Please check it regularly for messages from us and to post any questions/comments you may have. Please limit this Bboard to course-related stuff and observe proper netiquette.

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Book Feedback: I will be providing copies of various chapters of a book that is being prepared. In return, I expect you to provide me via e-mail feedback regarding clarity, organization, corrections, omissions, etc. With every chapter you receive, you should turn in your feedback.

Course Grading: Final course grade will depend on the following components.

Homework Assignments	10%
Project	20%
Mid-Term #1	20%
Mid-Term #2	20%
Final Examination	30%