ECE/OPTI 531
STUDY GUIDE FOR MID-TERM EXAM ON 12/4/03
11/25/03

THE EXAM WILL BE CLOSED BOOK AND NOTES

Chapter 6

two-component image model (Sect. 6.2)
convolution filters (Sect. 6.3, including median but not morphologic filters)
Fourier transforms (Sect. 6.4)

Be able to calculate:
- convolution of window with image
- spatial frequency coordinates

Exercise 6-4 (derive net filters)

Chapter 7

periodic noise (Sect. 7.2.3)
radiometric calibration (Sect. 7.3, except 7.3.4)
distortion correction (Sect. 7.4)

Be able to calculate:
- Eq. 7-7 to 7-11

Exercises 7-1 and 7-5

Chapter 9

the classification process (Sect. 9.2)
feature extraction (Sect. 9.3)
training the classifier (Sect. 9.4)
- separability measures (L1,L2,ANG)
- K-means clustering algorithm

nonparametric classification (Sect. 9.5, except 9.5.2-9.5.4)
parametric classification (Sect. 9.6)
- a priori, a posteriori, class conditional probabilities
- Bayes Rule
- relation of nearest-mean to maximum-likelihood classifier

Be able to calculate (given required data):
- level-slice and nearest-mean classification
- cluster results from one iteration to the next

Exercise 9-4