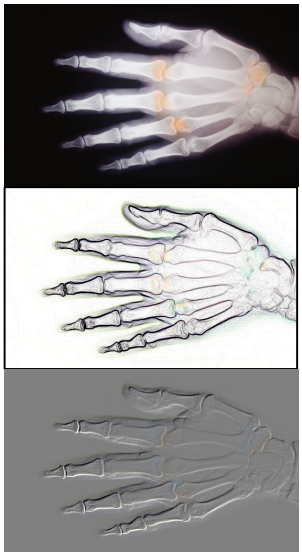
KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
ELECTRICAL ENGINEERING DEPART MENT

EE410 - DIGITAL IMAGE PROCESSING
(Offered in 092)

INTRODUCTION
The field of digital image processing deals with subjects of acquiring, transmitting, manipulating and analyzing images. There are many widespread real life applications for this growing field in the industry, business, medicine, education, security and many other areas. In fact, there exists great reliance on digital images nowadays in improving the quality of life and the efficiency of doing any business. Engineers and computer scientists are expected to be familiar with this area especially with the widespread use of the Internet and e-transactions.



MAJOR TOPICS
The main topics for this course include:

- **Digital image modeling and representation.**
- **Image formation: scanning, digitization, sampling, quantization, etc.**
- **Transforms and operations on images.**
- **Enhancements, smoothing, and reconstruction techniques.**
- **Restoration and filtering methods.**
- **Segmentation: edge and boundary detection, feature extraction.**
- **Compression and encoding**
- **Color & multi- image processing.**
- **Applications: Multimedia, videoconferencing, computer vision, etc.**
- **Ethical and legal issues**

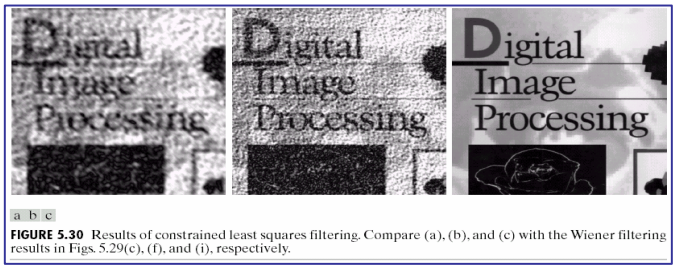
COURSE ACTIVITIES
The course activities will include computer assignments using Matlab image processing tool box or other programming tools.

WHO CAN TAKE THE COURSE?
This course is Suitable for students with majors in EE, ICS, COE, SE, &MPHYS

OFFERED in 092
DAYS : SMW, TIME : 11:00AM -11:50PM

PREREQUISITE
Senior standing or consent of the instructor

INSTRUCTOR:
Dr. Omar A. Al-Suwailem
Office: 9-242 ,
Phone: 2040 or 4686
e-mail: swailem@kfupm.edu.sa
http://faculty.kfupm.edu.sa/ee/swailem



a b c
FIGURE 5.30 Results of constrained least squares filtering. Compare (a), (b), and (c) with the Wiener filtering results in Figs. 5.29(c), (f), and (i), respectively.