**Course Syllabus**

**EE 5356 Section 001/002**

**TTh 2:00 PM to 3:20 PM,**

**Room: 109NH**

**Spring 2011**

Disclaimer: This on-line syllabus is provided for student convenience and is based on the most recent information available. There is no guarantee that the information is 100% accurate. If you have special concerns about course information, you are advised to contact the instructor.

1. Instructor: Dr.K.R.Rao

2. Office Location: Room 530 NH

3. Office Hours: M 11:00 AM-12:00 noon, W 3:00-4:00 PM

4. Phone: (817)272-3478

5. Fax: (817)272-2253

6. Mailbox: 19016

7. Email: rao@uta.edu

8. Instructor WWW Site: http://www-ee.uta.edu/EEDept/Faculty/rao.htm

9. Link to Additional Course Info:

http://www-ee.uta.edu/dip/Courses/EE5356/ee\_5356.htm

10. Course Prerequisites: EE 5350 or consent of instructor

11. Required Readings/Materials:

TEXTBOOK: "Fundamentals of Digital Image Processing," A. K. Jain, Prentice Hall, 1989.

www.prenhall.com

REFERENCES:

(1)"Digital Image Processing" R.C. Gonzalez and R.E. Woods, III Edition, Upper Saddle River, NJ:Prentice-Hall 2008

(2)”Introduction to data compression”, Z. Li and K.Sayood

(2a)"Solutions Manual-Introduction to data compression”, Z. Li and K.Sayood

(3) “H.264 and MPEG-4 Video compression”, Iain E.G. Richardson, WILEY, 2003

(3a) “The H.264 Advanced Video Compression Standard” Iain Richardson, WILEY, 2010. ISBN: 13:978-0-470-51692-8

(4) “Standard Codecs”, M. Ghanbari, IEE, UK 2003, (5) “Digital Image Processing using MATLAB”, R. C. Gonzalez, R. E. Woods and S. L. Eddins, Upper Saddle River, NJ, Prentice Hall, 2004

12. Course Description: The course covers the fundamentals, principles, concepts, and techniques of digital image processing, such as: image enhancement image restoration image manipulation image analysis image reconstruction image compression image segmentation filtering (wiener filter), interpolation (zooming) histogram equalization, magnification histogram, specification, replication Histogram modification Median filtering, zooming Edge detection, dithering.

13. Course Learning Goals/Objectives: To obtain familiarity and gain knowledge about various digital image processing (DIP) operations such as image perception, image fidelity, image enhancement, image filtering and restoration, image manipulation, and image data compression. To understand the techniques such as sampling, quantization, transforms, prediction so that these skills can be applied to the DIP operations.

14. Attendance and Drop Policy: Follow University guidelines

15. Tentative Lecture/Topic Schedule (course content):

INTRODUCTION Image Perception Image Sampling And Quantization Image Transforms Image Enhancement Image Filtering And Restoration Image Data Compression

Specific Course Requirements with descriptions

1. Quizzes (number and type): Two pop quizzes -----deleted for spring 2011-----

2. Examinations (number and type):

**Test#1: Tuesday, February 22, 2011**

**Test#2: Tuesday, April 5, 2011**

**Final Thursday, May 12, 2011**

3. Final Examination: Final Exam Non-Comprehensive

4. Other Graded Assignments (Homework / Projects / Labs / Research Papers): Design

Projects

5. Missed Exams, Quizzes and Makeup Work: None

6. Grading Format Weighting / Point Value of Assignments and Examinations:

Plan A: % Test 1-15% Test 2-15% Final- 20% Design projects-50%

Plan B: Max of Test 1 and Test 2 -25% Final 25% Design projects 50%

Course grades based on max of plan A and plan B.

A=90-100% B=80-89% C=70-79% D=60-69%

First day of classes: Tuesday, 18 January 2011

Spring break: Monday–Friday, 14-18 March 2011 Last day to drop or withdraw: 1st April 2011

7. Other Information:

1. No makeup.

2. No incomplete

3. Everyone must take the tests and the final exam at the same time at

the UTA campus, Room 109, Nedderman Hall.

If the student has questions /clarifications regarding the returned tests, this needs to be taken care of within a week from the date of returns. Final exam papers will not be returned. The student, however, has the right to look at his/her exam paper and discuss it with the instructor. Deadline for this is normally the mid-semester of the following long semester. (No telephone calls or inquiries regarding course grades, please.) Everyone must take the tests and final exam at the same time and at the same place. If you have any questions on your returned tests, please do so within a week. Per the distance education policy, the distance education students are supposed to have a 24hr window to take their exams. This time frame is to accommodate working students and students located in different time zones. Contact: Engineering center for distance education (Room 242, Nedderman Hall):Donya Ph; 1-817-2722352 Fax; 1-817-272-5630, email; drandolph@uta.edu

Final Review Week

A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or

exercises of similar scope that have a completion date during or following this week unless specified in the class syllabi. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week.

Americans with Disabilities Act

The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 93112 -- The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans With Disabilities Act - (ADA), pursuant to section 504 of The Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

As a faculty member, I am required by law to provide "reasonable accommodation" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty at the beginning of the semester and in providing authorized documentation through designated administrative channels.

Academic Dishonesty

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form.

All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University.

"Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (Regents’ Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22)

Student Support Services Available

The University of Texas at Arlington supports a variety of student success programs to help you connect with the University and achieve academic success. These programs include learning assistance, developmental education, advising and mentoring, admission and transition, and federally funded programs. Students requiring assistance academically, personally, or socially should contact the Office of Student Success Programs at 817272-6107 for more information and appropriate referrals.

For assistance with your library needs in this course, please consult the appropriate subject librarian.