Relevant Published Materials:
The list is meant to be fairly comprehensive and includes library call numbers. The comments are my own
gauges of usefulness to this class and to imaging in general.

(formerly by Gonzalez and Wintz)

demonstrates relationship of digital image processing to optical systems), TA1632.C37.

**Digital Image Processing, Principles and Applications**, Gregory A. Baxes, Wiley, 1994 (about the right level
for this class, includes a floppy disk – ha! – with images)

(application of linear systems to imaging), TA1632.B36.

applications, multiple authors, fragmented), TA1632.I4824.

discussion of broad range of imaging topics, relevant material in §4-5,§8-10), T385.G585.

than the title indicates; written for medical students and radiologists, does not require a "high" level of
mathematical knowledge, useful intuitive discussions of imaging principles) RC78.7.D53 P36.

**Digital Image Processing**, William K. Pratt, Wiley, 1991 (former standard text, EE point of view,
comprehensive)

**An Introduction to Digital Image Processing**, Wayne Niblack, Prentice Hall, 1986 (thin quick coverage)


**An Introduction to Digital Image Processing**, André Marion, Chapman and Hall, 1991 (comes from
photographic scanning point of view)

**Digital Picture Processing**, Azriel Rosenfeld and Avinash Kak, Academic Press, 1982 (two volumes) (ancient
classic)

**Computer Image Processing and Recognition**, Ernest Hall, Academic Press, 1979 (once was text for this class,
I may have spare copies?)
Computing Resources:

Many computational software packages are available that would be helpful when learning the material in this class. CIS has selected **IDL™** from ITT Visual Information Solutions (http://www.ittvis.com/) as its "standard" package. It is installed on the UNIX workstations in the Center, and also is available for purchase from CIS. Other packages exist, including **Mathematica™** (available on RIT VAX), **MathCad™**, **Matlab™**, and **Scientific Workplace™**. All these packages allow computations involving most aspects of matrix algebra and complex analysis to be evaluated quickly and (more or less) painlessly. They also have graphing routines which may assist in visualizing concepts. In my opinion, most of the packages have a fairly steep learning curve – you can't do much that is useful "out of the box." The programs also have their respective advantages and disadvantages, e.g., my opinion is that the interfaces to **Mathematica™** and **MathCAD™** are not very intuitive, which means that new users have to travel the learning curve. Conversely, experienced users are rewarded by quicker answers.

Two free programs are available for illustrating the concepts of linear systems. My old DOS program, **"Signals"** for 1-D functions runs in DOS and in Windows (at least) through XP. By using the “DOSBox” utility (an x86 emulator available from http://www.dosbox.com/), it can be run quite well in Windows Vista, Windows 7, Apple OS X and Linux. **Signals** was written with the intent of being easy to use (though you must decide for yourself whether it succeeds). It is available gratis and may be downloaded from the CIS website at: http://www.cis.rit.edu/resources/software/index.html

A user manual also is available online at: http://www.cis.rit.edu/resources/software/sig_manual/index.html

**SignalShow**

The new Java counterpart of **Signals**, called **SignalShow**, illustrates both 1-D and 2-D cases. The beta releases for the three primary computing platforms (Windows, Macintosh OSX, and Linux) are available online at http://www.signalshow.com/. This site includes links to help videos that are posted on YouTube. You may find this program very helpful in your quest to visualize the concepts in this course, as well as in 1051-718 “Digital Imaging Mathematics,” and in 1051-733 “Optics for Imaging.”