Image processing software development

- Theoretical summary (color models, color depth, intensity transformations, simple functions)
- Mathematical basis of some image processing functions (time and frequency domain, Fourier-transformation, convolution integral)
- Theory of the digital filters, and practical filters
- Some image data format, including satellite image formats (ArcInfo BIL, ENVI BIL, DDM)
- Software development tools for image processing (Bitmap, BitmapData, LockBitmap, Marscal.Interop.Copy, etc.)
- Bitmap to byte array conversion, and vice versa
- Binary elevation file reading and displaying
- Samples #1: Develop a raster viewer program, which reads and displays large satellite (BIL) and 3D (DDM) datasets
- Samples #2: Develop a filter program, which contains many filter functions (color inversion, grayscale conversion, low and high pass filters, median filter, edge detectors, and so on)
- Consultation of course work

Literature:
Smith: Digital Signal Processing Download (http://mapw.elte.hu/elek/pdf/dsp.pdf)
Bagdanov A: Style Characterization of Machine Printed Texts, University of Amsterdam, 2004, http://www.cvc.uab.es/~bagdanov/thesis.html

Suggested literature:
Farid Hany: Fundamentals of Image Processing
(http://www.cs.dartmouth.edu/farid/downloads/tutorials/fip.pdf)