

# ELE-882 Introduction to Digital Image Processing

- **Course Outline**

<http://www.ee.ryerson.ca/~courses/ele882>

- **Key Knowledge to Be Acquired**

Analysis of discrete-time signals and systems, introduction to digital image processing, digital image processing fundamentals, image enhancement in spatial domain, convolution, spatial filtering, Discrete Fourier Transform (DFT), image enhancement in frequency domain, filter design and implementation, order statistic filters, adaptive filters, periodic noise reduction by using the frequency domain filtering and some basic concepts of color image processing.

- **Key Skills to Be Mastered**

Analysis of image in spatial and frequency domain, filter design in spatial and frequency domain, basics of Linear Algebra, understanding of MATLAB in terms of digital image processing.

- **Potential Careers**

Software/hardware engineers for image/video processing, transmission, video display, HDTV design and testing, 3D medical imaging, 3D digital cinemas, embedded systems software developer (video) and many more.

- **Potential Employers**

Research in Motion (RIM), MRI Modality Manager, Healthcare-Imaging & IT, Auto Appraiser (National Imaging Desk), Epson Canada, VIXS Systems, AutoDesk, IMAX Corporation, Broadcom, AMD Canada, Christie Digital, IBM Canada, Microsoft, Google, NGRAIN - Interactive 3D Simulation. etc

- **Graduate Studies,**

Simon Fraser, Carleton, Calgary, Ryerson, Toronto, Waterloo, UBC, McGill, Dalhousie, etc., have strong graduate programs in Digital Image Processing and Analysis.