

ELE815 – Cellular Mobile Communications

- **Course Outline**

<http://www.ee.ryerson.ca/undergraduate/dcd/ele815.html>

- **Key Knowledge to Be Acquired**

Evolution of wireless communications, especially the generations of mobile technologies; fundamental of cellular system design including frequency reuse, channel assignment, improvement of capacity and grade of service; the characteristics of radio propagation including large-scale path-loss and small scale fading; various modulation techniques for mobile radio; equalization and diversity techniques to improve the performance of radio link; Multi-access techniques for mobile users to share a finite amount of spectrum.

- **Key Skills to Be Mastered**

Allocation of radio channel through frequency reuse; design of trunked radio system for a specific capacity at a specific “grade of service”; prediction of radio signal strength at a particular receiving point; Estimation of the type of fading experienced by a signal received; choice of appropriate modulation, equalization, diversity and multiple access techniques for mobile radio

- **Potential Careers**

RF/wireless Engineers, wireless network engineers, wireless system design engineers, wireless system deployment engineers, wireless test engineers, ...

- **Potential Employers**

Alcatel-Lucent, Bell Mobility, Ericsson, Fido, Huawei, Koodo, Motorola, Nokia Siemens, Primus, RIM, Rogers Wireless, Solo Mobile, Telus Mobility, ZTE, ...

- **Graduate Studies**

Carleton, Calgary, McMaster, Ryerson, Queens, Toronto, Waterloo, UBC, McGill, etc., have strong graduate programs in wireless communications.