Cornell University
Systems Engineering

Masters of Engineering Degree in Systems Engineering via Distance Learning

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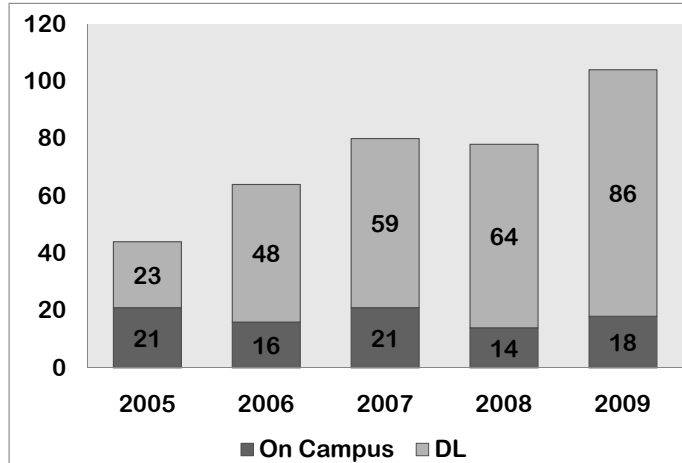4/6/2010   1

System Engineering at Cornell

- *discipline of applying <u>mathematical, behavioral and scientific principles</u> to the definition, design, development, and operational evaluation of <u>total systems solutions</u> to a wide variety of engineering problems, including the integration of human, physical, energy, communications, cost, logistics, management, and information requirements.*

- *Belief that good systems engineers are "T-shaped"*

- *Focus on Master of Engineering*

- *Extensive systems related research in the College across several departments*

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Enrollment

Enrollment bar chart showing On Campus and DL students from 2005 to 2009.

Year	On Campus	DL
2005	21	23
2006	16	48
2007	21	59
2008	14	64
2009	18	86

■ On Campus ■ DL

Curriculum

Core
- **Project Leadership**
- **Applied Systems Engineering**
- **Systems Architecture, Behavior, and Optimization**
- **Project**

Electives
- **Systems Engineering for the Design and Operation of Reliable Systems (Black Belt Certification) or a Modeling and Analysis Course**
- **Management Course**
- **Systems Engineering Application Elective**
  - **Telecommunications**
  - **Power Systems**
  - **Supply Chain**
  - **Etc.**

Experience Cornell On-Campus for Distance Learning Students

Year 1:

SYSEN 5920 • Systems Engineering Management for Virtual Teams

- *(1 credit; On-campus Summer)*

Year 2:

SYSEN 5940 • Creativity and Innovation within Systems Engineering

- *(1 credit; On-campus Summer; Prerequisite: SYSEN 5920)*

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The Technologies of Distance Learning

Lectures in Ives Hall with connection to remote sites

LT Matthew Zarracina completed his degree while serving in Iraq

- *Synchronous transmission (two-way audio and video)*
  - *By special arrangement*
- *Asynchronous transmission*
  - *Lecture posted on course website shortly after on-campus delivery*
  - *Web-streaming video of instructor and classroom*
  - *Synchronized with crisp images of lecture material*
  - *Jump to any point of lecture*
- *On-line content management system*
  - *Posting announcements, schedules, lecture notes, assignments, video links*
  - *Electronic submission of homeworks*
- *Proctored exams (express mail return)*

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Illustrative Examples of DL Technologies

- **Office Hours technologies**
  - Screen sharing (viewing and control)
  - On-line white boards
  - Electronic breakout rooms, FTP, Polling and Chating
- **Master of Engineering Projects**
  - Sponsor: Applied Materials
  - Objective: Analysis of product development process
  - Students located in Singapore and South Korea

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