

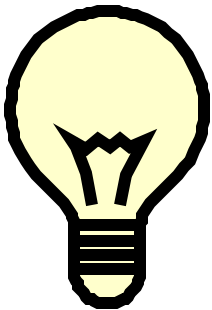
A professional Master degree on the internet

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Introduction

- Internet
 - Widely diffused
 - Easy to exchange information in the form of
 - Text
 - Images (picture, video)
 - Sounds (voice, music)
 - Allows for **interaction**



The technology is available for providing **online teaching**

Motivations for online Education

Potential students that:

- live in locations far from colleges,
 - cannot attend classes because of work/family obligations,
- may be interested in pursuing an online degree

Other forms of distance education, such as courses by mail/videotape, have already existed for many years but they have the disadvantage of being essentially non-interactive.

Motivations for online Education

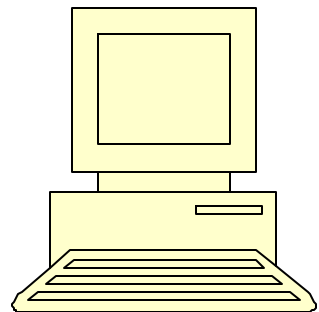
Online education offers two main ways of interaction:

Asynchronous

students and instructors determine their own pace

Synchronous

requires everybody to be in front of a computer at a scheduled time



The Master of Engineering degree program



- First classes offered in September 1999
- Professional degree program based totally on coursework, without a research component.
- Ideal for those who cannot attend classes
- Compulsory courses are:
 - Engineering Law
 - Engineering Management
 - Executive Seminar
- Choice of courses in
 - Wireless Communications
 - Micro Electro Mechanical Systems (MEMS)
 - Electromagnetics
 - Computer Science
 - Thermodynamics

(more at www.uic.edu/eng/meng)

Chemical Engineering	Computer Engineering	Computer Science	Electromagnetics	Energy Resources	MEMS	Wireless Communications & Signal Processing	Compulsory Courses
ChE 494	ECE 465	CS 475	ECE 401	ME 450	ECE 401	ECE 422	Engr 400
ChE/ME 494	ECE 466		ECE 422	ME 501	ECE 449	ECE 432	Engr 401
			ECE 423	ChE/ME 494		ECE 434	Additional Courses Engr 402 Engr 403
			ECE 520			ECE 435	
			ECE 526			ECE 437	
						ECE 535	

1. ChE 494 – Fundamentals and Design of Microelectronics Processing
2. ChE/ME 494 – Computational Molecular Modeling
3. CS 475 – Object-Oriented Languages and Environments
4. Engr 400 -- Engineering Law
5. Engr 401 -- Engineering Management
6. Engr 402 – Intellectual Property Law
7. Engr 403 -- Reliability Engineering
8. ECE 401 – Quasi Static Electric and Magnetic Fields
9. ECE 422 – Wave Propagation and Communication Links
10. ECE 423 – Electromagnetic Compatibility
11. ECE 432 – Digital Communications
12. ECE 434 – Multimedia Communication Networks
13. ECE 435 – Wireless Communication Networks
14. ECE 437--- Wireless Data
15. ECE 449 – Microdevices and Micromachining Technology
16. ECE 465 – Digital Systems Design
17. ECE 466 – Advanced Computer Architecture
18. ECE 520 – Electromagnetic Field Theory
19. ECE 526 – Electromagnetic Scattering
20. ECE 535 – Advanced Wireless Communication Networks
21. ME 450 – Air Pollution Engineering
22. ME 501 – Advanced Thermodyn

MEng Courses for 2002-2003

Fall 2002

1. ECE 432
2. ECE 435
3. ECE 465
4. ECE 466*
5. ECE 491a (Eng. Manage.)
6. ECE 491d (Int. Prop. Law)
7. ECE 491e (Wireless Data)
8. ECE 520
9. Engr 400
10. ME 501

Spring 2003

1. ChE 494
2. ChE/ME 494*
3. CS 475
4. ECE 401
5. ECE 422
6. ECE 423
7. ECE 434
8. ECE 437
9. ECE 526
10. ECE 535
11. Engr 400
12. Engr 401 (ECE 491a)
13. Engr 403 (ECE 491c)
14. ME 450*

*Denotes new course:

*ECE 466—“Advanced Computer Architecture”

*ChE/ME 494—“Computational Molecular Modeling”

*ME 450—“Air Pollution Engineering”

OnLine Course Registration

	<u>MEng (Campus 6)</u>	<u>Campus 3</u>	<u>Campus 1</u>	<u>Total</u>
Fall 2000	11	14	138	163
Spring 2001	22	26	255	303
Fall 2001	42	25	227	294
Spring 2002	60*	27	168	255

*Plus 2 MEng registrations
For non-online courses: (ece 451 and me 504)

Taking an online class

Students can:

- Access (download or stream) lecture material
- Access homework assignments
- Contact the instructor and other students through:
 - Email
 - Discussion board
 - (synchronized virtual classroom)
- Take automatically graded online quizzes
- Check their grades/calendar...

(more at <http://courseinfo.uic.edu>)

Considerations for instructors

- Different options to present lecture material
- Tracking students' access to lecture material
- Additional time required to initially develop an online class compared to *live teaching*
- Flexibility to teach everywhere in the world (attend conferences without requiring substitutes)
- Easier to update lecturing material to include new research findings

Financial considerations

- About \$60,000 are required to produce a new one-semester online course. The costs are due to
 - Course creator's release time from teaching during the semester
 - One month of summer salary for course creator
 - 50% teaching assistant for one year
 - Maintain and amortize the computer equipment
 - Use of UIC TV/audio studio and technicians' time

Benefits and students feedback for the MEng program

Students have appreciated the following:

- Flexibility in terms of location, time, pace.
- Effectiveness of learning through the use of [multimedia interactive approaches](#).
- The incorporation of a quiz after each lecture to provide immediate feedback on student comprehension.

Caveats

- Difficult to motivate faculty to produce online classes, due to the significant time commitment.
- Difficult to raise funds to create new courses.
- Exams must be proctored. This presents an administrative challenge when students are taking classes from out of state/country locations. It helps having contacts with other universities.

Conclusions

- Online classes have opened universities to people who would have not considered pursuing a degree.
- Online classes have advantages as well as disadvantages. It is better to start with only a few online classes and then increase their number gradually.
Rather than promise a whole degree program, and then fail, it is more important to deliver the goods.