Annual Meeting

March 24, 2017
Topics

- Enrollment
- Prerequisite and co-requisite
- Residency requirement
- Repeat policy and sequencing
- Tracks for the BSCS program
- Honors thesis, research, scholarships, graduate schools
CRA article: Generation CS
http://cra.org/data/generation-cs/

3 waves of CS enrollment

First wave, in the 1980’s, introduction of IBM PC
Second wave, in the 1990’s, dot-com boom
Third wave, surging now, no end in sight

Our programs:

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UMass Boston, Fall 2016: 10,280 FTE, 12,847 HC undergraduates
Prerequisites and co-requisites are summarized on the back of the advising form

As a chart: [http://www.cs.umb.edu/~ming/UPD/CSReqChart.pdf](http://www.cs.umb.edu/~ming/UPD/CSReqChart.pdf)

CS 210 as a co-requisite of CS 240 will be removed, effective in the fall semester

- Pending governance approval
- Implication:
  - After CS 110, you may take CS 210 first, or CS 240 first, or CS 210 and CS 240 together
  - You need to pass both CS 210 and CS 240 before you can take CS 310
Residency Requirement

- For BSCS and BACS
  - Current requirement: a minimum of four 300-level or higher CS or MATH courses must be taken at UMB
  - Proposed requirement: a minimum of six 300-level or higher CS or MATH courses must be taken at UMB
    - Pending governance approval
- For the Certificate Program: a minimum of three 300-level or higher CS or MATH courses must be taken at UMB
Repeat Policy

- www.umb.edu/registrar/academic_policies/course_repeat_policy
- You may repeat up to four different courses
- You may repeat a course only once
- My advice: Withdraw from a course if it looks like you will fail
- If you fail a fifth course, or if you fail the same course twice, it is not the end of the world
- You can submit an appeal for a waiver of the repeat policy
Course Sequencing

- If you have passed a course on the right, you will not get the credit for repeating a course on the left

1. CS 114 → CS 115
2. CS 114 → IT 115
3. IT 114 → CS 115
4. IT 114 → IT 115

1. CS 115 → CS 110 → CS 210 → CS 310 → CS 410
2. CS 110 → CS 115 → CS 210 → CS 310 → CS 410
3. IT 115 → CS 110 → CS 210 → CS 310 → CS 410
4. CS 110 → IT 115 → CS 210 → CS 310 → CS 410

- CS 240 → CS 341 → CS 444
- CS 320 → CS 420
- CS 109 → CS 240
Current BSCS Requirements

- CS 110, 210, 240, 285, 310, 341, 410, 420, 444, 450, 451
  - 35 credit hours
- MATH 140, 141, 260, 320, 345
  - 17 credit hours
- Physics I & II & labs, one science elective
  - 15 credit hours
- Two CS electives at the 400-level or higher
  - 6 credit hours
- In total: 73 credit hours
In the planning stage
Not retroactive
Choose between the general track and the specialized tracks
The general track
  The default: take any two CS electives
Specialized tracks
  Replace the two CS electives by three designated courses in a specialization
  Increase the BSCS credit hours from 73 to 76
  Diploma shows BSCS, Machine Learning Track (for example)
Specialized Tracks Under Consideration

- **Database track**
  - CS 430 Database Management Systems, CS 436 Database Application Development, CS 437 Database-Backed Web Sites and Web Services

- **Machine learning track**
  - CS 438 Applied Machine Learning, CS 470 AI, and Big Data Analytics (in preparation)

- **Human-computer interaction track**
  - Choose three out of four: CS 271 Intro to Cognitive Science, CS 460 Graphics, CS 461 Computer Games Programming, CS 615 User Interface Design

- **Cybersecurity track**
  - CS 449 Intro to Computer Security, Cybersecurity in the Internet of Things (in preparation), Cryptography (in preparation)
CS Curriculum Recommended by Google

By semesters:

1. Intro to programming (Python or Java)
2. OO programming (Java)
3. Data structures, Discrete structures
4. Algorithms, Computer organization (assembly)
5. Linear algebra/numerical analysis (Python or R), Computer networking (Java or Python)
6. Operating systems (C or Java), Database systems (Python or JS)
7. Computer security, Software engineering
8. Big data or machine learning, Senior capstone
Take all four courses

- CS 430 Database Management Systems
- CS 438 Applied Machine Learning
- CS 446 Introduction to Internetworking
- CS 449 Introduction to Computer Security

Increase BSCS credit hours from 73 to 79
Research

- Determine what research areas you are interested in
- Talk to professors with expertise in the fields
- To graduate with department honors: 3.0 overall GPA, 3.5 CS GPA, Honors thesis
- CSM scholarships
  https://forms.umb.edu/csm-opportunities/c/csm-scholarships
Q & A