

**To: Computer Science Majors**

**From: Barry Levine, Acting-Chair, Department of Computer Science**

**Subject: Electives requirement (four 3-unit courses)**

The electives requirement for Computer Science majors (00-01 Bulletin) is:

Electives are selected from the nine subareas of Computer Science listed below. Electives must meet the following requirements:

1. One of the electives must be either CSc 520, theory of Computing, or CSc 656, Computer Organization.\*
2. *Depth Requirement:* Two of the electives must be chosen from the same subarea of the discipline.
3. *Breadth Requirement:* Electives must be chosen from three different subareas.  
(\*CSc 520 and CSc 656 can be used to partially meet the depth and breadth requirements.)

Note: it is recommended that students planning to continue their study of Computer Science in graduate school take both CSc 656 and CSc 520.

Below is a table which lists the subareas that each course is included in. You may use this table to determine whether or not you are meeting the requirements.

	num	alg	arch	ai	db	progl	graph	os	se
CSc 520	0	1	0	0	0	1	0	0	0
CSc 610	0	1	0	0	0	0	0	0	0
CSc 620	0	0	0	1	0	1	0	0	0
CSc 630	0	1	0	0	0	0	1	0	0
Csc 635	0	1	0	0	0	0	0	0	0
CSc 640	0	0	0	0	0	1	0	0	1
CSc 641	0	0	1	0	0	0	0	0	1
CSc 642	0	0	0	0	0	0	1	0	1
CSc 645	0	0	0	0	0	0	0	1	0
CSc 650	0	0	0	0	0	0	0	1	0
CSc 651	0	0	0	0	0	0	0	1	0
CSc 656	0	0	1	0	0	0	0	0	0
CSc 665	0	0	0	1	0	1	0	0	0
CSc 667	0	0	0	0	0	0	0	1	1
CSc 668	0	0	0	0	0	1	0	0	1
CSc 671	0	1	0	1	0	0	0	0	0
CSc 675	0	1	0	0	1	0	0	0	0
CSc 690 (Unix)	0	0	0	0	0	0	0	1	0
CSc 690 (Sec Net Sys)	0	0	0	0	0	0	0	1	0
MATH 400	1	1	0	0	0	0	0	0	0

For example, the following four electives meet the requirement:

CSc 520 Theory of Computing	Algorithms & Theory
CSc 620 Natural Language Processing	Artificial Intelligence
CSc 671 Neural Networks	Artificial Intelligence
CSc 675 Introduction to Database Systems	Database

CSc 520 meets requirement (1).

CSc 620 and CSc 671 are both in the Artificial Intelligence area (depth requirement (2)).

CSc 520, CSc 620, and CSc 675 are in three different areas (breadth requirement (3)).



## **Areas of Special Emphasis**

### ***Algorithms and Theory of Computing***

CSc 520 Theory of Computing  
CSc 630 Computer Graphics Systems Design  
CSc 635 Software Techniques for the Processing of Computer Music and Sound Data  
CSc 671 Neural Networks  
CSc 675 Introduction to Database Systems  
MATH 400 Numerical Analysis I

### ***Architecture***

CSc 641 Computer Performance Evaluation  
CSc 656 Computer Organization

### ***Artificial Intelligence***

CSc 620 Natural Language Processing  
CSc 665 Introduction to Artificial Intelligence  
CSc 671 Neural Networks

### ***Database***

CSc 675 Introduction to Database Systems

### ***Graphics***

CSc 630 Computer Graphics Systems Design  
CSc 642 Human Computer Interaction

### ***Numerical and Symbolic Computing***

MATH 400 Numerical Analysis I

### ***Operating Systems and Distributed Processing***

CSc 641 Computer Performance Evaluation  
CSc 645 Computer Networks  
CSc 650 Secure Networked Systems  
CSc 651 System Administration  
CSc 656 Computer Organization  
CSc 667 Internet Application Design and Development

### ***Programming Languages***

CSc 520 Theory of Computing  
CSc 620 Natural Language Processing  
CSc 640 Software Engineering  
CSc 665 Introduction to Artificial Intelligence  
CSc 668 Object Oriented Programming

### ***Software Engineering***

CSc 640 Software Engineering  
CSc 642 Human Computer Interaction  
CSc 667 Internet Application Design and Development  
CSc 668 Object Oriented Programming