

# BYU Computer Science Major

## Requirements / Prerequisites

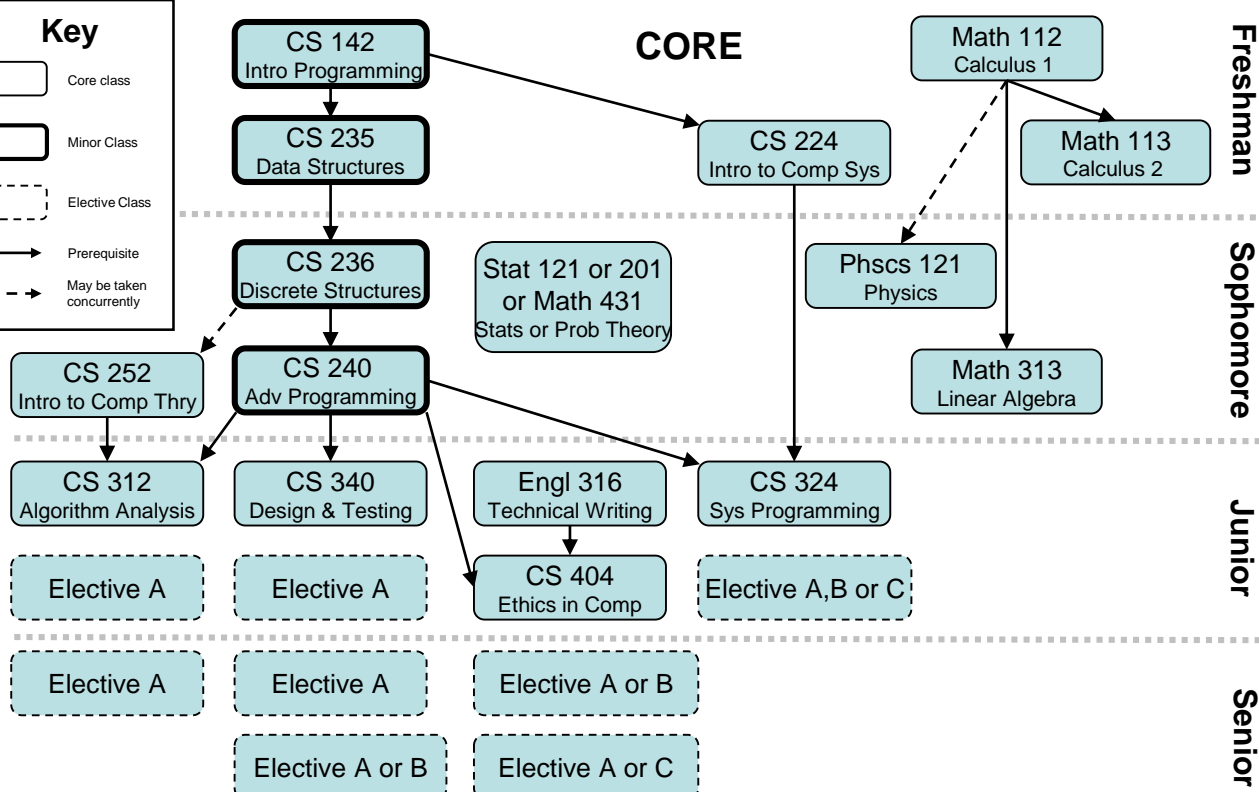
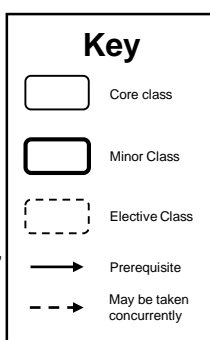
### Fall 2017

#### Major (74-77 Hours)

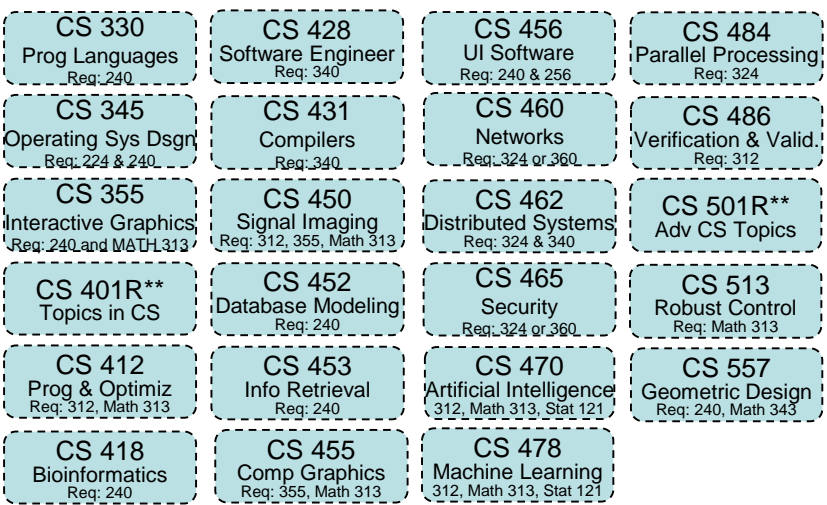
- Grades below C- are not allowed in major courses.
  - Complete the following courses: CS 142, 224, 235, 236, 240, 252, 312, 324, 340, 404
  - Complete the following supporting courses: Engl 316, Math 112, 113, 313, and Phscs 121
  - Complete one of the following: Math 431, Stat 121 or Stat 201
  - Complete a total of 8 elective courses from the follow three groups:
    - 4-8 courses **must** be from the following courses: CS 330, 345, 355, 401R\*\*, 412, 418, 428, 431, 450, 452, 453, 455, 456, 460, 462, 465, 470, 478, 479, 484, 486, 501R\*\*, 513, 557
    - Up to 3 courses from the following courses: CS 256, 260, 405, EC EN 424, EC EN 425, IT 567, MATH 411, MATH 485
    - Up to 2 courses from the following courses: CS 493R\*\*, 494, 495, 497R\*\*, 498R\*\*
- (If CS 401R, 493R, 497R, 498R, or 501R is chosen, it must be taken for three credit hours)

#### Elective Information:

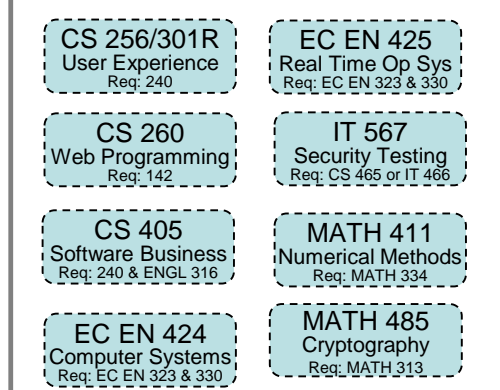
Students must complete a total of 8 elective courses. At least 4 electives **must** come from elective group A. The remaining 4 electives can be taken from the elective groups A (up to 4), B (up to 3), or C (up to 2).



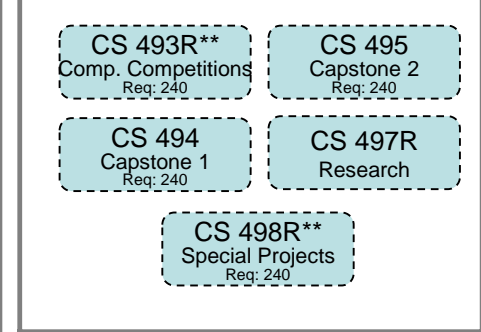
#### Elective A (Choose 4-8 courses)



#### Elective B (Choose 0-3 courses)



#### Elective C (Choose 0-2 courses)



Guide only— please consult MyMap for full requirements.

\*\*Must be taken for 3 hours to fill the requirement

# BYU Computer Science Major

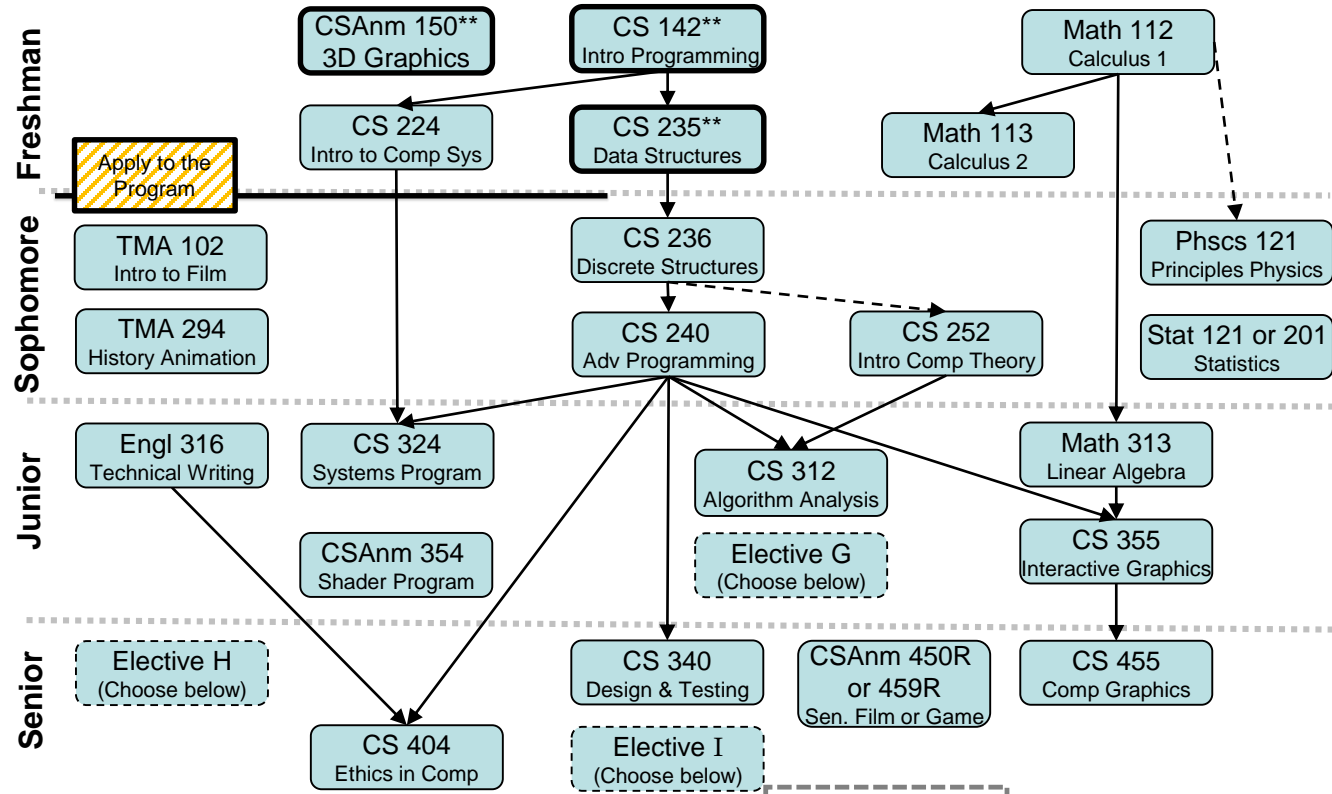
## Animation Emphasis (78.5-79.5 Hours)

### Fall 2017

- A. Grades below C- are not allowed in major courses
- Core Course Requirements**
- B. Complete the following prerequisite courses: CS 142, CS 235, CSAnm 150
- C. Apply to the program
- D. Complete the following: CS 224, 236, 240, 252, 312, 324, 340, 355, 404, 455
- E. Complete the following supporting courses: CSAnm 354, Engl 316, Math 112, 113, 313, Phscs 121, TMA 102, 294 and Stat 121 or 201
- F. Complete either CSAnm 450R or 459R

- Elective Course Requirements**
- G. Complete 1 course from the following: ArtHC 111, ArtHC 202, or Tech 201
- H. Complete 1 course from the following: CS 498R\*, 501R\*, CSAnm 351R, 355, 452R, 458, CHEM 500, EC EN 425 or any CS 400 or 500-level course not used in above requirements
- I. Complete 1 courses from the following: CS 256, 260, 330, 345, EcEn 425, or any 400-level CS courses (except CS 404, 405, 455, and 498R\*)

\*CS 401R, 498R & 501R must be taken for 3 credits



**Key**

- Elective classes
- Core classes
- Prerequisite
- May be taken concurrently
- \*\* Must be completed before applying to program

<b>Elective G</b> (Choose 1 course)	<b>Elective H</b> (Choose 1 course)		<b>Elective I</b> (Choose 1 course)				
ArtHC 111 Art History	CSAnm 351R Lighting for 3D	CS 498R* Special Projects <small>Req: CS 240</small>	CS 256/301R User Interface <small>Req: CS 240</small>	CS 260 Web Programming <small>Req: CS 142</small>	CS 418 Bioinformatics <small>Req: CS 240</small>	CS 452 Database Modeling <small>Req: CS 240</small>	CS 465 Security <small>Req: CS 324 or 360</small>
ArtHC 202 World Civ 1500+	CSAnm 355 Photo for Anim	CHEM 500 Business Essentials	CS 330 Program Languages <small>Req: CS 240</small>	CS 412 Models & Optimiz. <small>Req: CS 312, Math 313</small>	ECEn 425 Real-time OS <small>Req: ECEn 323 or 330</small>	CS 453 Info Retrieval <small>Req: CS 240</small>	CS 470 Artificial Intelligence <small>Req: 312, Math 313, Stat 121</small>
Tech 201 History Creativity	CSAnm 452R Senior Film 2	EC EN 425 Real-Time Operating	CS 345 Operating Systems <small>Req: CS 224, 240</small>	CS 401R* Special Topics	CS 428 Software Engineer <small>Req: CS 340</small>	CS 456 User Interface Soft <small>Req: CS 240, 256</small>	CS 478 Machine Learning <small>Req: 312, Math 313, Stat 121</small>
	CSAnm 458 3D Effects	CS 4xx or 5xx	CS 431 Compilers <small>Req: CS 340</small>	CS 418* Special Topics	CS 431 Compilers <small>Req: CS 340</small>	CS 460 Networks <small>Req: CS 324 or 360</small>	CS 479 Language Process <small>Req: CS 312, Stat 121</small>
			CS 412 Models & Optimiz. <small>Req: CS 312, Math 313</small>	CS 450 Signal Image <small>Req: 312, 355, Math 313</small>	CS 450 Signal Image <small>Req: 312, 355, Math 313</small>	CS 462 Distributed Systems <small>Req: CS 324 &amp; 340</small>	CS 484 Parallel Process <small>Req: CS 324</small>
			CS 412 Models & Optimiz. <small>Req: CS 312, Math 313</small>	CS 450 Signal Image <small>Req: 312, 355, Math 313</small>	CS 450 Signal Image <small>Req: 312, 355, Math 313</small>	CS 462 Distributed Systems <small>Req: CS 324 &amp; 340</small>	CS 486 Verification & Valid. <small>Req: 312</small>

# BYU Computer Science Major

## Bioinformatics Emphasis

(85 Credit Hours)

Fall 2017

1. Grades below C- are not allowed in major courses.

2. Complete the following courses:  
CS 142, 224, 235, 236, 240, 252, 312, 324, 340, 404, 418.

2. Complete the following additional courses:

- Engl 316.
- Math 112, 113, 313.
- Phscs 121.
- Stat 121 or 201
- Bio 130, 465
- Chem 105.
- MMBio 240.
- PWS 340.

3. Elective Course Requirements  
Complete 18 hours from the courses

A. Complete 4-6 elective courses  
CS 260, 401R\*, 412, 428, 431, 450, 452, 453, 455, 456, 460, 462, 465, 470, 478, 479, 484, 486, Bio 463

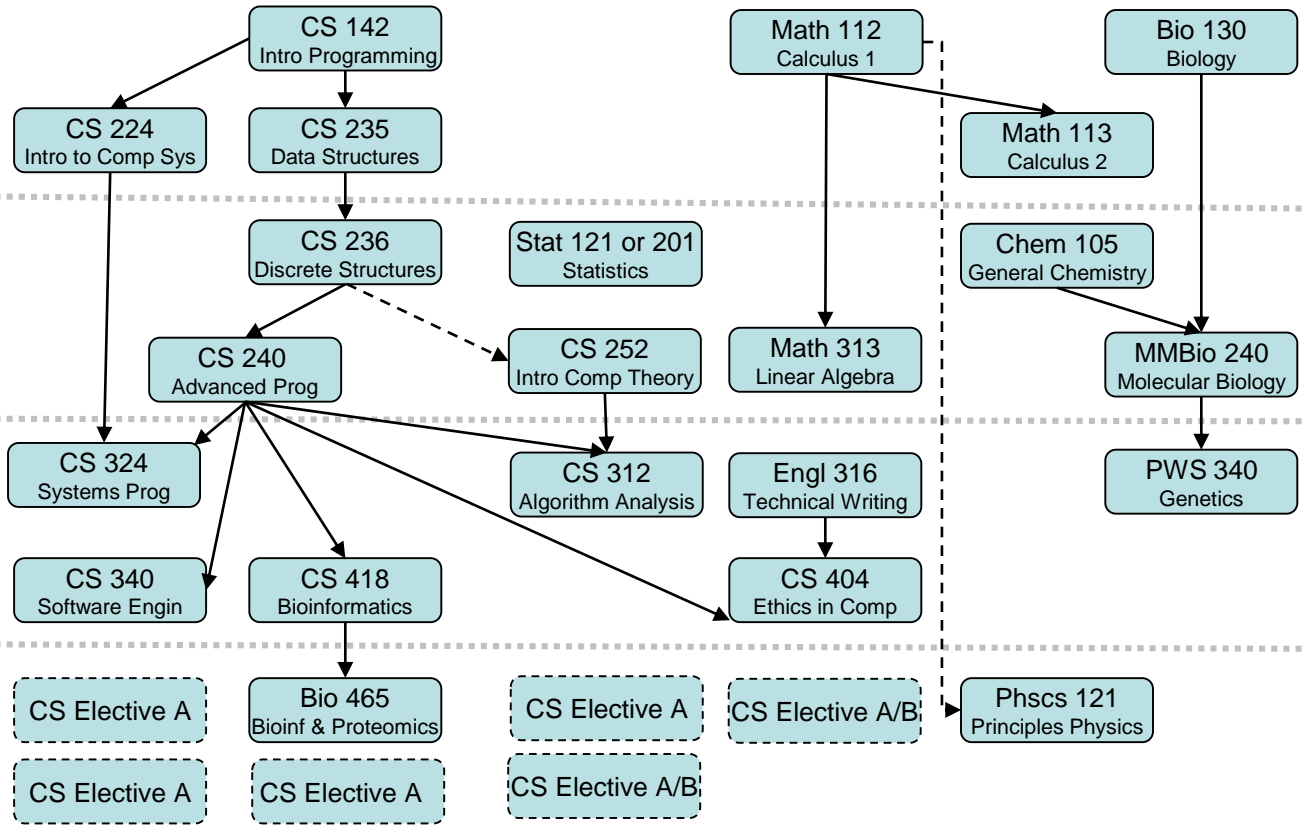
B. Complete 0-2 elective courses  
CS 493R, 494, 495, 497R, 498R

Freshman

Sophomore

Junior

Senior



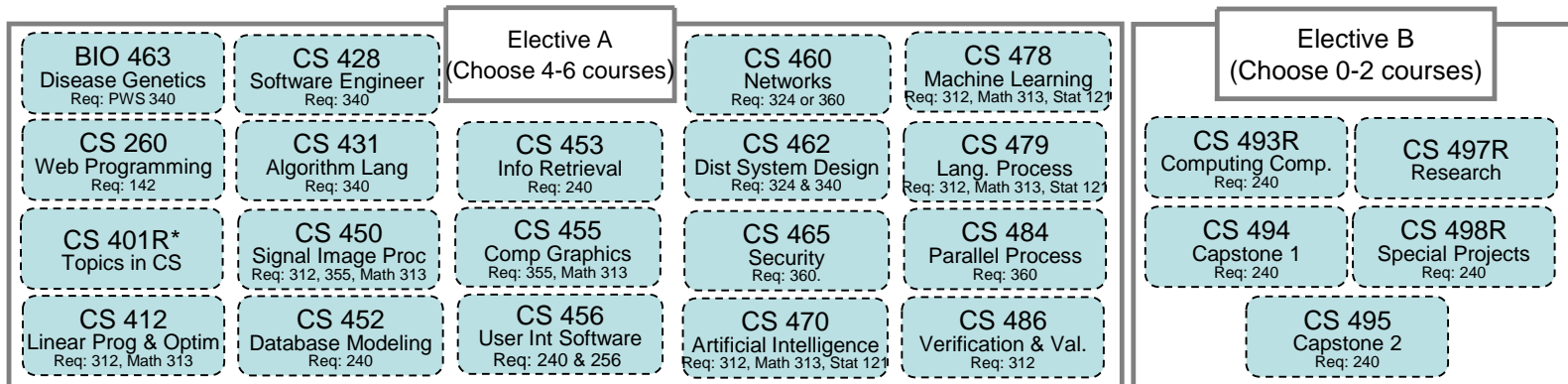
### Key

Elective classes

Core classes

Prerequisite

May be taken concurrently



# BYU Computer Science Minor

## (22 Credit Hours)

### Fall 2017

A. Grades below C- are not allowed in minor courses

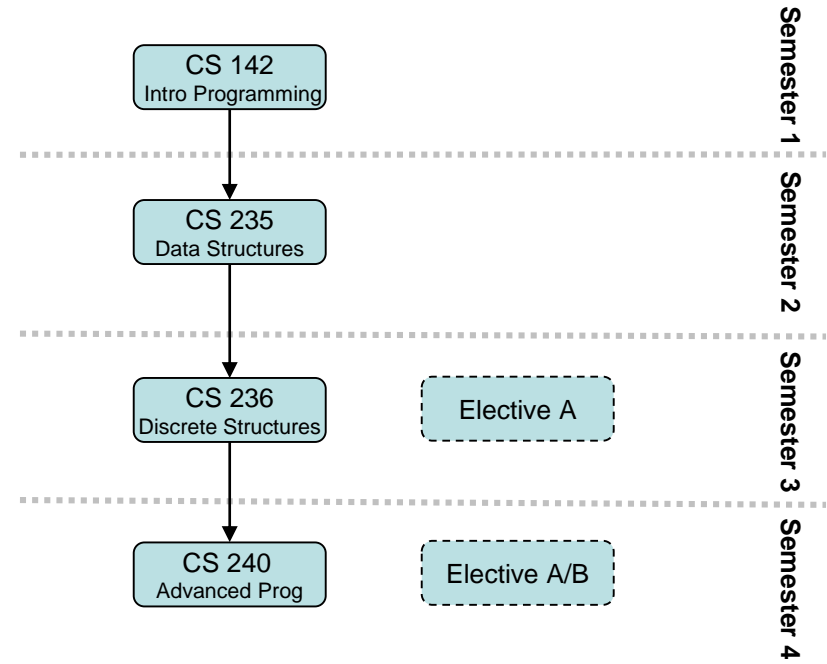
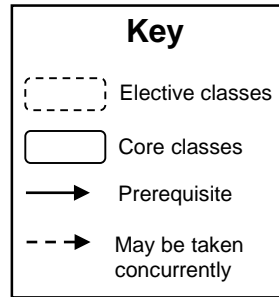
#### Core Requirements

B. Complete the following courses:  
CS 142, 235, 236, 240

#### Elective Course Requirements

- C. Complete up to six hours from the following courses:  
CS 201R\*, 224, 252, 256, 260, 301R\*, 312, 330, 340, 345, 355, 401R\*, 412, 418, 428, 431, 450, 452, 452, 455, 456, 460, 462, 465, 470, 478, 479, 484, 486
- D. Complete up to three hours from the following courses:  
CS 493R\*, 497R\*, 498R\*, 501R\*, 513, 557

\* Note: if these classes are chosen, they must be taken for three credit hours.



**Elective A**  
(Choose 1-2 courses)

**Elective B**  
(Choose 0-1 courses)

CS 201R** Topics in CS	CS 301R** Topics in CS	CS 355 Graphics Processing <small>Req: CS 240, MATH 313</small>	CS 431 Algorithmic Lang <small>Req: CS 340</small>	CS 456 UI Software <small>Req: CS 240, 256</small>	CS 478 Machine Learning <small>Req: 312, Math 313, Stat 121</small>
CS 224 Intro Comp Systems <small>Req: CS 142</small>	CS 312 Algorithm Design <small>Req: CS 240, 252</small>	CS 401R** Topics in CS	CS 450 Digital Signal/ Proc. <small>Req: 312, 355 &amp; MATH 313</small>	CS 460 Comm. & Networking <small>Req: CS 324 or 360</small>	CS 479 Natural Lang. <small>Req: CS 312, Stat 121</small>
CS 252 Intro Comp Theory <small>Req: CS 236</small>	CS 330 Programming Lang. <small>Req: CS 240</small>	CS 412 Linear/ Convex Optimiz <small>Req: CS 412 &amp; MATH 313</small>	CS 452 Database Modeling <small>Req: CS 240</small>	CS 462 Large-Scale Design <small>Req: CS 324, 340</small>	CS 484 Parallel Proc. <small>Req: CS 324</small>
CS 256/301R User Experience <small>Req: CS 240</small>	CS 340 Software Design <small>Req: CS 240</small>	CS 418 Bioinformatics <small>Req: CS 240</small>	CS 453 Info Retrieval <small>Req: CS 240</small>	CS 465 Computer Security <small>Req: CS 324 or 360</small>	CS 486 Verification & Valid. <small>Req: CS 312</small>
CS 260 Web Programming <small>Req: CS 142</small>	CS 345 Operating Sys Design <small>Req: CS 224, 240</small>	CS 428 Software Engineering <small>Req: CS 340</small>	CS 455 Computer Graphics <small>Req: CS 355, MATH 313</small>	CS 470 Artificial Intelligence <small>Req: 312, Math 313, Stat 121</small>	

**\*\*Must be taken for 3 hours to fill the requirement**