BYU Computer Science Major

Bioinformatics Emphasis

(81 Credit Hours)
Fall 2025 Requirements

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

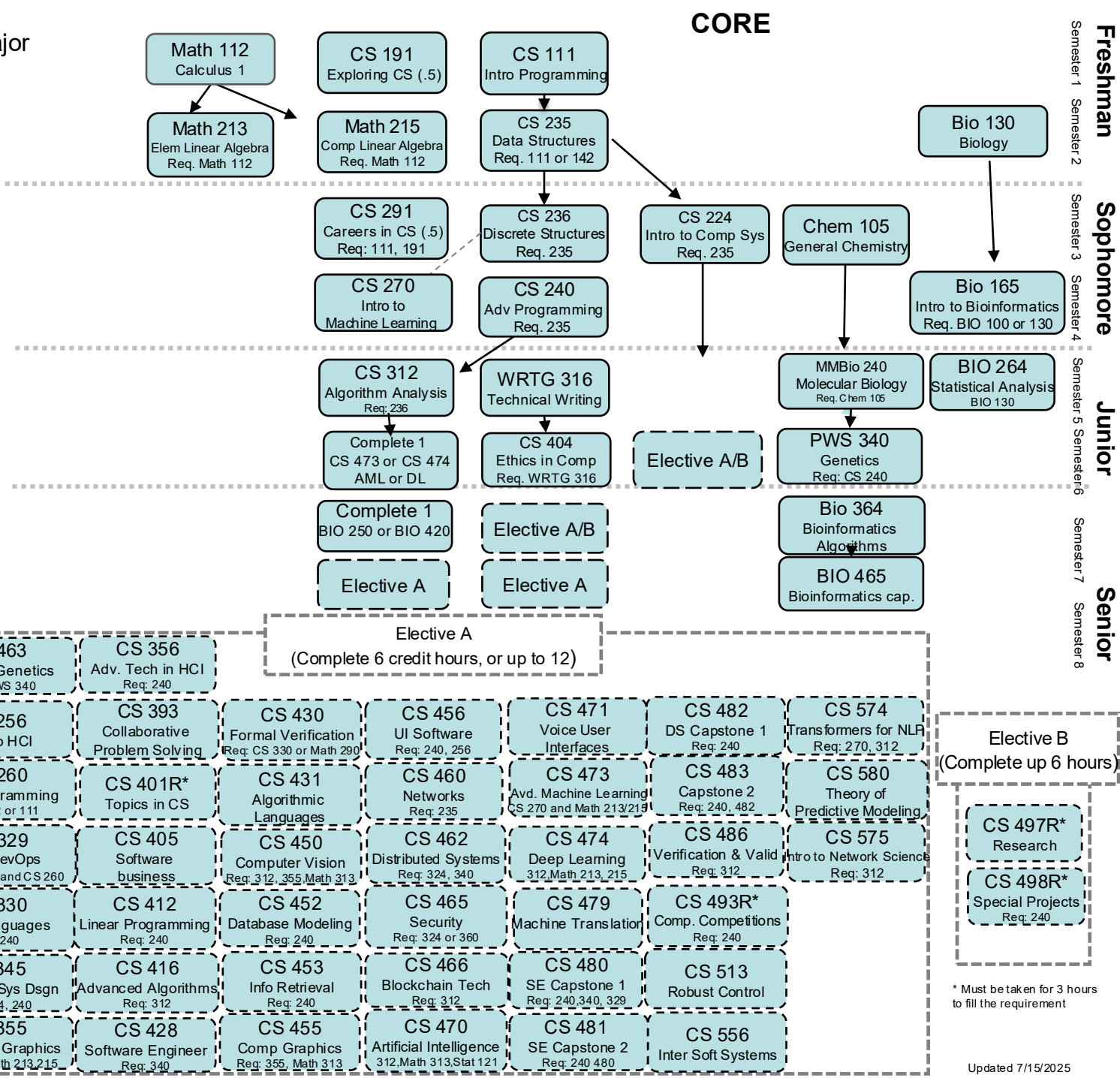
Core Course Requirements (85 Hours)

2. Complete the following 10 courses: CS 111, 191, 224, 235, 236, 240, 270, 291, 312, 404,
2. Complete the following 7 courses: BIO 130, BIO 165, BIO 264, BIO 364, BIO 465, MMBIO 240, PWS 340
3. Complete the following 5 courses: CHEM 105, Math 112, Math 213, Math 215, WRTG 316
4. Complete 1 courses: BIO 250 or BIO 420
5. Complete 1 course: CS 473 or CS 474**
6. Complete 12 total hours from the following:

A Complete 9 to12 credit hours from the following: BIO 463, CS 256, 260, 329, 330 345, 355, 356, 393, 401R, 405, 412, 428, 430, 431,450, 452 ,453, 455, 456, 460, 462, 465, 466, 470, 471, 473, 474, 479, 480, 481, 482, 483, 486, 493R, 513, 556, 574, 575,or 580

B. Complete up to 6 hours CS 497R*, 498R*

**Courses may not double count requirements 5 and 6



Guide only – Consult MyMap for your major/minor requirements

Updated 7/15/2025

BYU Computer Science Major

Bioinformatics Emphasis

(81 Credit Hours)
Fall 2024 Requirements

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

Core Course Requirements (85 Hours)

2. Complete the following 10 courses: CS 111, 191, 224, 235, 236, 240, 270, 291, 312, 404,
2. Complete the following 7 courses: BIO 130, BIO 165, BIO 264, BIO 364, BIO 465, MMBIO 240, PWS 340
3. Complete the following 5 courses: CHEM 105, Math 112, Math 213, Math 215, WRTG 316
4. Courses cannot double count between Complete 1 courses: BIO 250 or BIO 420
5. Complete 1 course: CS 473 or CS 474**
6. Complete 12 total hours from the following:

A Complete 9 to12 credit hours from the following: BIO 463, CS 256, 260, 329, 330 345, 355, 356, 393, 401R, 405, 412, 428, 431,450, 452 ,453, 455, 456, 460, 462, 465, 466, 470, 471, 473, 474, 479, 480, 481, 482, 483, 486, 493R, 513, 556, 574, 575,or 580

B. Complete up to 6 hours
CS 497R*, 498R*

* Must be taken for 3 hours to fill the requirement

** Courses may not double count between requirements 5 and 6

Key

- Elective classes
- Core classes
- Prerequisite
- May be taken concurrently

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CORE

Freshman

Semester 1

- Math 112 Calculus 1
- CS 191 Exploring CS (.5)
- CS 111 Intro Programming

Semester 2

- Math 213 Elem Linear Algebra Req. Math 112
- Math 215 Comp Linear Algebra Req. Math 112
- CS 235 Data Structures Req. 111 or 142
- Bio 130 Biology

Sophomore

Semester 3

- CS 291 Careers in CS (.5) Req: 111, 191
- CS 236 Discrete Structures Req. 235
- CS 224 Intro to Comp Sys Req. 235
- Chem 105 General Chemistry

Semester 4

- CS 270 Intro to Machine Learning
- CS 240 Adv Programming Req. 235
- Bio 165 Intro to Bioinformatics Req. BIO 100 or 130

Junior

Semester 5

- CS 312 Algorithm Analysis Req: 236
- WRTG 316 Technical Writing
- MMBio 240 Molecular Biology Req. Chem 105
- BIO 264 Statistical Analysis BIO 130

Semester 6

- Complete 1 CS 473 or CS 474 AML or DL
- CS 404 Ethics in Comp Req. WRTG 316
- Elective A/B
- PWS 340 Genetics Req: CS 240

Senior

Semester 7

- Complete 1 BIO 250 or BIO 420
- Elective A/B
- Bio 364 Bioinformatics Algorithms

Semester 8

- Elective A
- Elective A
- BIO 465 Bioinformatics cap.

Elective A (Complete 6 credit hours, or up to 12)

- Bio 463 Disease Genetics Req: PWS 340
- CS 356 Adv. Tech in HCI Req: 240
- CS 256 Intro to HCI
- CS 393 Adv Algorithms & Problem Solving
- CS 260 Web Programming Req: 142 or 111
- CS 401R* Topics in CS
- CS 329 Test, Analyze, Verify Req: 240
- CS 405 Software business
- CS 330 Prog Languages Req: 240
- CS 412 Linear Programming Req: 240
- CS 345 Operating Sys Dsgn Req: 224, 240
- CS 428 Software Engineer Req: 340
- CS 355 Interactive Graphics Req: 240,Math 213,215
- CS 431 Algorithmic Languages
- CS 450 Computer Vision Req: 312, 355,Math 313
- CS 452 Database Modeling Req: 240
- CS 453 Info Retrieval Req: 240
- CS 455 Comp Graphics Req: 355, Math 313
- CS 456 UI Software Req: 240, 256
- CS 460 Networks Req: 324 or 360
- CS 462 Distributed Systems Req: 324, 340
- CS 465 Security Req: 324 or 360
- CS 466 Blockchain Tech Req: 312
- CS 470 Artificial Intelligence 312,Math 313,Stat 121
- CS 471 Voice User Interfaces
- CS 473 Avd. Machine Learning 312,Math 215,Stat 121
- CS 474 Deep Learning 312,Math 213, 215
- CS 479 Machine Translation
- CS 480 SE Capstone 1 Req: 240,340, 329
- CS 481 SE Capstone 2 Req: 240 480
- CS 482 DS Capstone 1 Req: 240
- CS 483 Capstone 2 Req: 240 ,482
- CS 486 Verification & Valid Req: 312
- CS 493R* Comp. Competitions Req: 240
- CS 513 Robust Control
- CS 556 Research Methods in HCI
- CS 574 Transformers for NLP Req: 270, 312
- CS 575 Intro to Network Science Req: 312
- CS 580 Theory of Predictive Modeling

Elective B (Complete up 6 hours)

- CS 497R* Research
- CS 498R* Special Projects Req: 240

Updated 6/21/2019

BYU Computer Science Major

Bioinformatics Emphasis

(79 Credit Hours)
Fall 2023 Requirements

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

Core Course Requirements (85 Hours)

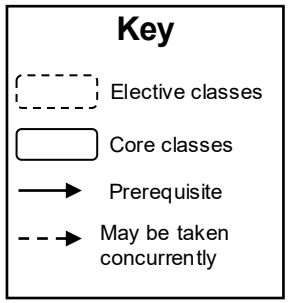
2. Complete the following 8 courses: CS 111, 224, 235, 236, 240, 312, 324, 404,
2. Complete the following 7 courses: BIO 130, BIO 165, BIO 264, BIO 364, BIO 465, MMBIO 240, PWS 340
3. Complete the following 6 courses: CHEM 105, Math 112, Math 213, Math 215, WRTG 316
4. Courses cannot double count between Complete 1 courses: BIO 250 or BIO 420
5. Complete 1 course: CS 472 or CS 474**
6. Complete 12 total hours from the following:

A Complete 9 to12 credit hours from the following: BIO 463, CS 256, 260, 329, 330 345, 355, 356, 393 401R 405, 412, 428, 431,450, 452 ,453, 455, 456, 460, 462,465, 466, 470, 471, 472, 474, 479, 480, 481, 482,483,486,493R, 513, 575, 580

B. Complete up to 6 hours
CS 497R*, 498R*

* Must be taken for 3 hours to fill the requirement

** Courses may not double count between requirements 5 and 6



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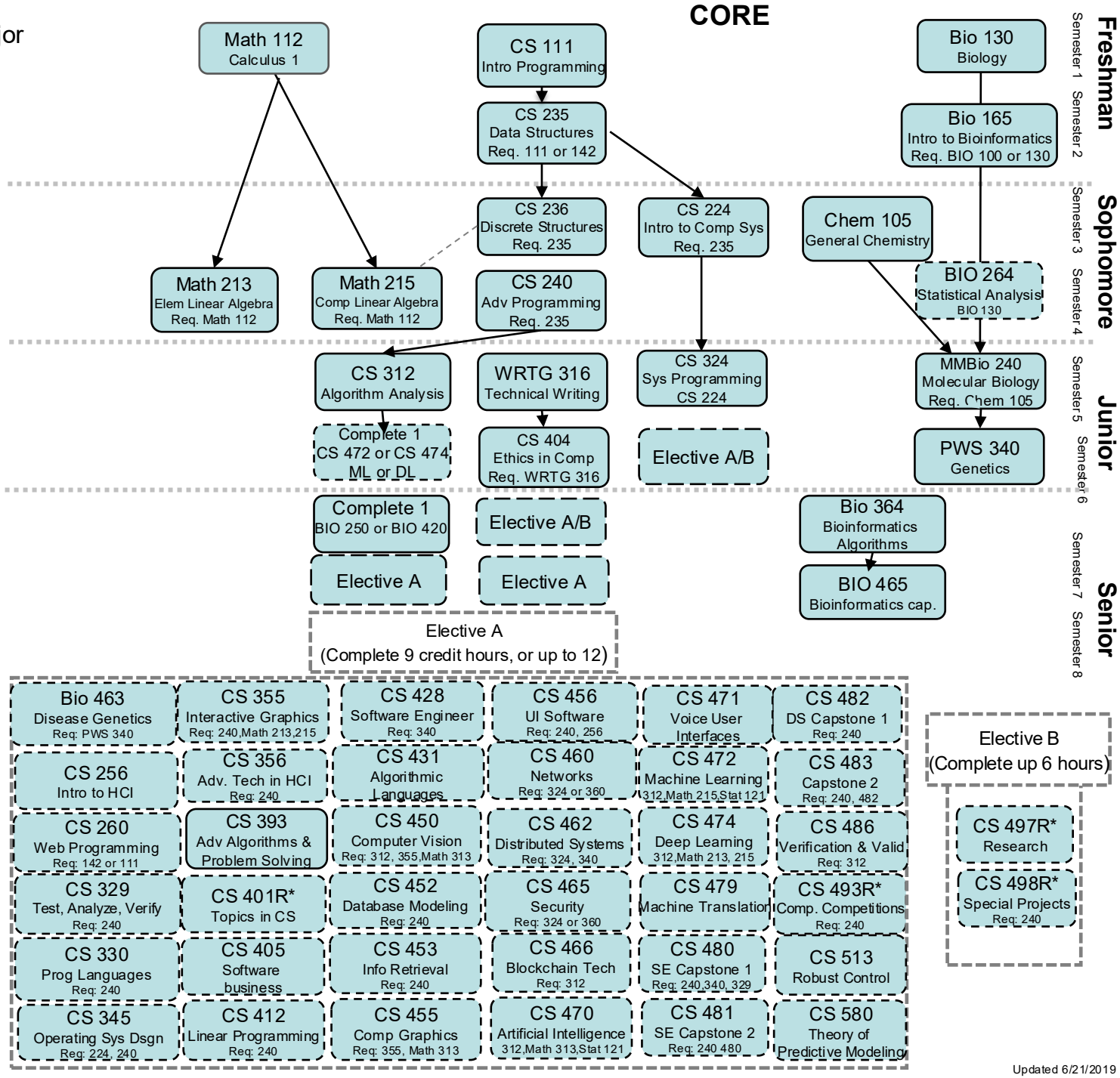


Updated 6/21/2019

BYU Computer Science Major

Bioinformatics Emphasis

(84 Credit Hours)
Fall 2022 Requirements

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

Core Course Requirements (85 Hours)

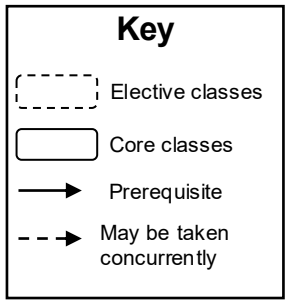
2. Complete the following 8 courses: CS 111, 224, 235, 236, 240, 312, 324, 404,
2. Complete the following 7 courses: BIO 130, BIO 165, BIO 264, BIO 364, BIO 465, MMBIO 240, PWS 340
3. Complete the following 6 courses: CHEM 105, Math 112, Math 113, Math 213, Math 215, WRTG 316
4. Courses cannot double count between Complete 1 courses: BIO 250 or BIO 420
5. Complete 1 course: CS 472 or CS 474**
6. Complete 12 total hours from the following:

A Complete 9 to12 credit hours from the following: BIO 463, CS 260, 329, 330 345, 355, 356, 393 401R 405, 412, 428, 431,450, 452 ,453, 455, 456, 460, 462,465, 470, 471, 472, 474, 480, 481, 482,483,486,493R, 513, 580

B. Complete 0-2 elective courses
CS 497R*, 498R*

* Must be taken for 3 hours to fill the requirement

** Courses may not double count between requirements 5 and 6



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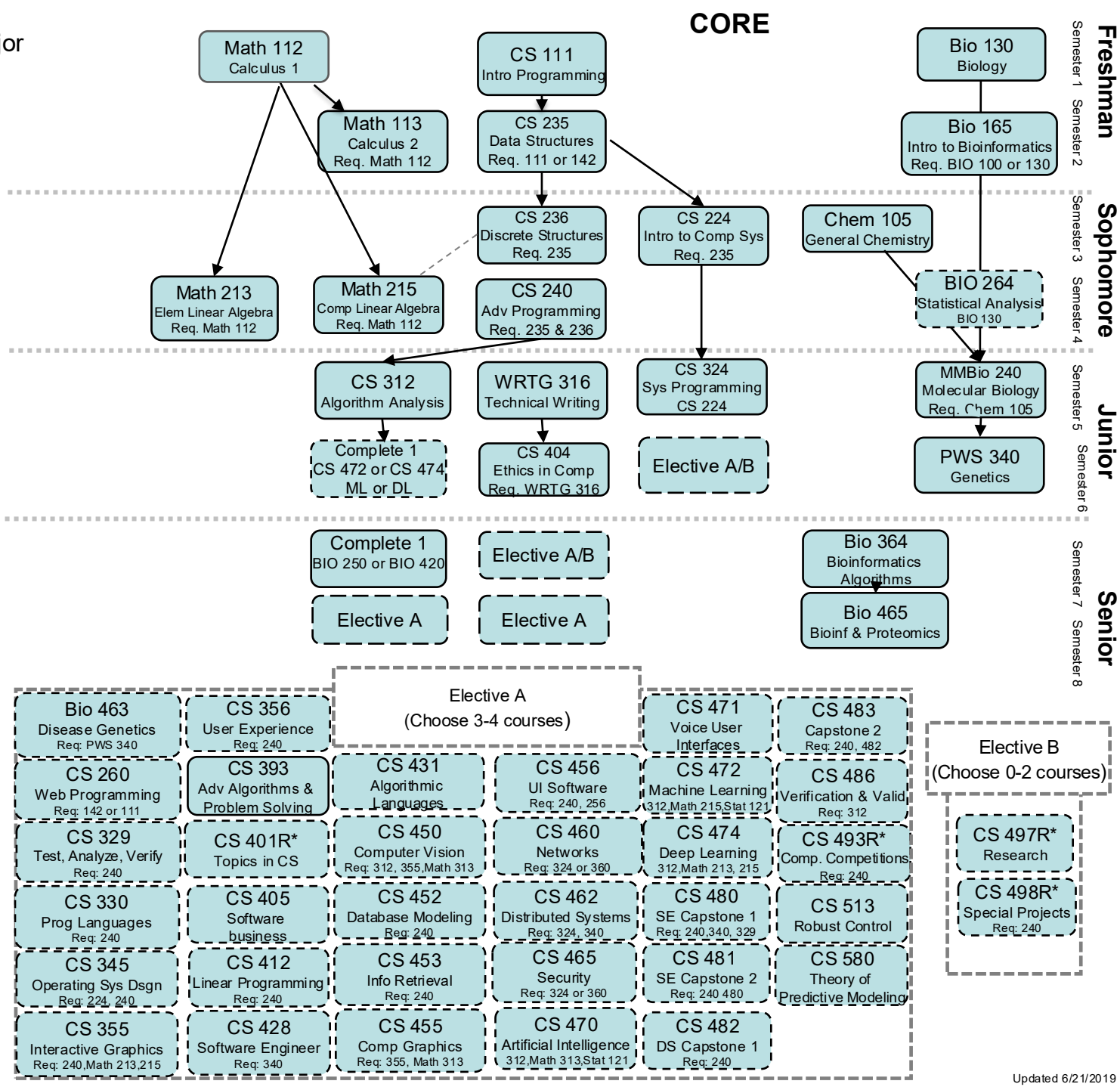

Updated 6/21/2019