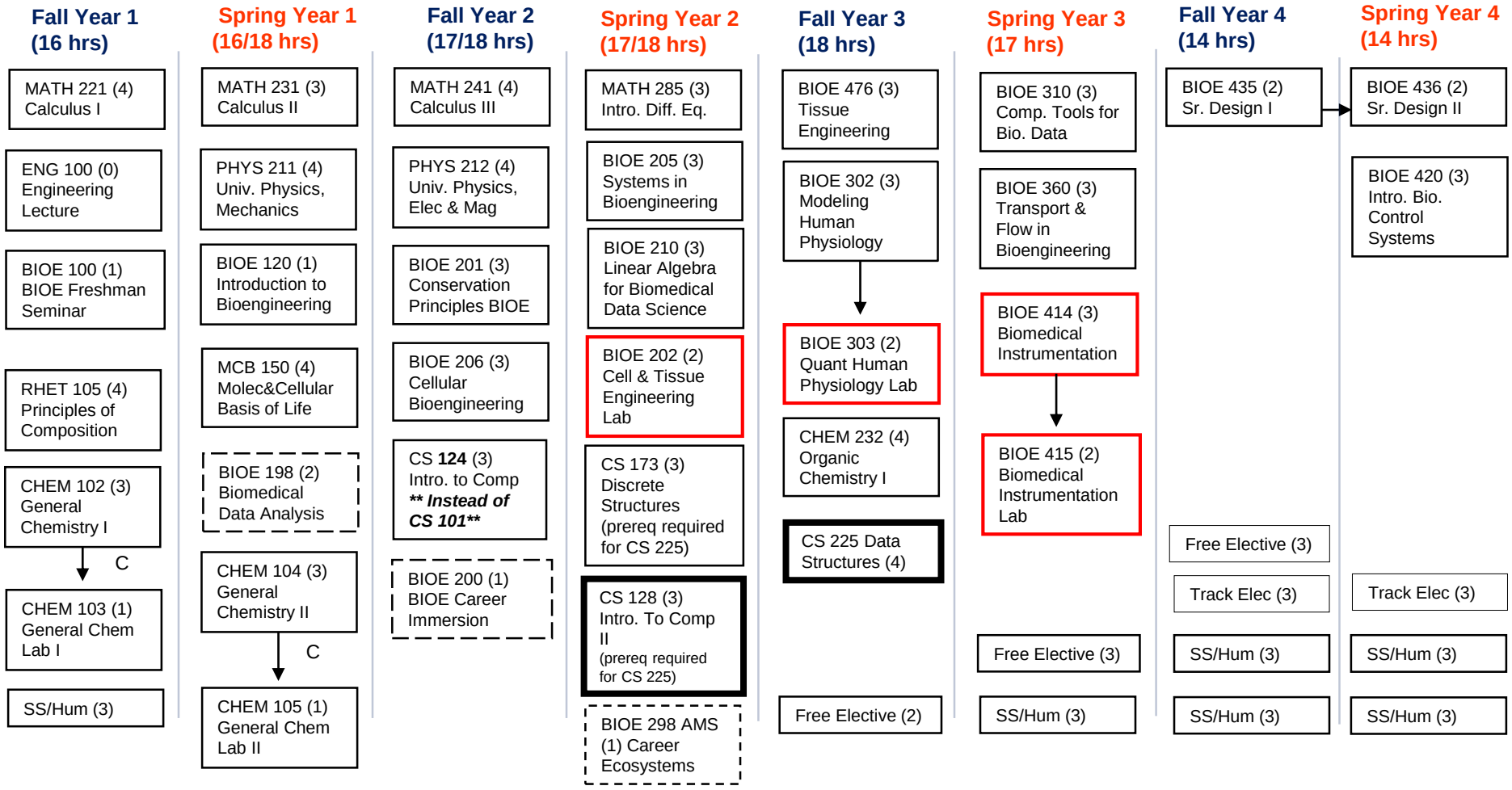
Computation & Systems Biology Track
Curriculum Map



** Note – not taking courses as advised may result in a delayed graduation date. Students are responsible for any impact resulting from not following departmental advising.

** If outlined in RED then the BIOE course is offered both Fall & Spring Semesters

**Courses with dashed line borders are not currently required as part of the Core BIOE Curriculum

Computation & Systems Biology Track Electives

- **BIOE 430 – Intro. Synthetic Biology (3 hr)**
- **BIOE 483 – Biomedical Computed Imaging/Systems (3 hr)**
- **BIOE 484 – Stat Analysis of Biomedical Images (3 hr)**
- **BIOE 485 – Comp Math for Machine Learning/Imaging (4 hr)**
- **BIOE 486 – Applied Deep Learning for Biomedical Imaging (3 hr)**
- **BIOE 488 - Applied High-Performance Comp. for Imaging Science (3 hr)**
- **BIOE 498 TL – Intro to Systems Bio (3 hr)**
- **BIOE 498 PJ – Experimental Design in Automation (3 hr)**
- **BIOE 498 RI – Regulatory Safety Issues In Bioengineering (3 hr)**
- **ABE 440 – Applied Statistical Methods I (4 hr)**
- **ECE 365 – Data Science & Engineering (3 hr)**
- **ECE 401 – Signal & Image Analysis (4 hrs)**
- **ECE 410/NE 410 - Neural Circuits & Systems (3 hrs)**
- **ECE 490 – Introduction to Optimization (3 hr)**
- **ECE 498 NSU – Deep Learning in Hardware (3 hr)**
- **SE 423 – Mechatronics (3 hr)**
- **IE 310 – Deterministic Models in Optimization (3 hr)**
- **IE 370 – Stochastic Processes and Applications (3 hr)**
- **NPRE 461 – Probabilistic Risk Assessment (3 hr)**
- **NPRE 498 PRA – Advanced Risk Analysis (3 hr)**
- **TMGT 461TMD/TME – Tech, Eng, and Mngmt Project (4hr)**
- **CS 128 – Intro to Comp. 2 (3 hr)**
- **CS 225 – Data Structures (4 hr)**
- **CS 398 DL – Deep Learning (3 hr**
- **CS 411 – Database Systems (3 hr)**
- **CS 412 – Introduction to Data Mining (3 hr)**
- **CS 440 – Artificial Intelligence (3 hr)**
- **CS 444 – Deep Learning for Computer Vision (3 hr)**
- **CS 446 – Machine Learning (3 hr)**
- **CS 450 – Numerical Analysis (3 hr)**
  CS 465 – User Interface Design (4 hr)
- **CS 466 – Introduction to Bioinformatics (3 hr)**
- **NE 420/ECE 421 – Neural Interface Engineering (3 hr)**

General Education Requirements

- ❑ 6 hours in Humanities
- ❑ 6 hours in Social/Behavioral Sciences
- ❑ 6 hours in Liberal Education
- ❑ 1 Advanced Composition Course
- ❑ 1 Western Comparative Cultures Course
- ❑ 1 Non-Western Comparative Cultures Course
- ❑ 1 US Minority Cultures Course
- ❑ Language Other Than English

PreMed Requirements

- ❑ Meet with The Career Center for Premed advising
- ❑ Common Courses *(additional requirements may apply depending on school)*:
  - ❑ MCB 450/354 (BioChem)
  - ❑ CHEM 233 (Orgo 1 lab)
  - ❑ Social/Behavioral Science Sequence (3 courses)