6-1: Electrical Science and Engineering

The 6-1 curriculum builds primarily on the Physics II and Calculus II GIRs; not all courses require a GIR as a pre-requisite

advanced undergraduate subjects build on header material; exact pre-requisites vary

- **Advanced Undergraduate Subject**
- **Advanced Undergraduate Subject**

students choose three **header subjects**, which typically rely on a foundation course as a pre-requisite

- **Electromagnetics** 6.013
- **Nanoelectronics** 6.012
- **Cellular Neurophysiology** 6.021
- **Signals and Systems** [1] 6.011
- **Electromagnetic Fields** 6.014
- **Machine Learning** 6.036

foundation subjects build on introductory material

- **Circuits** 6.002
- **Signals** 6.003
- **Computation Structures** 6.004

introductory subjects introduce students to the breadth of our department, and teach fundamental skills for electrical engineering and computer science

- **Differential Equations** 18.03 or 2.087
- **Introduction to EECS** 6.01 or 6.02 or 6.03 or 6.08
- **Programming Skills** 6.0001 or (6.145 + (6.01 or 6.08))

co-req

or

- **Communication** 6.UAT or 6.UAR
- **Course 6 Elective**
- **Course 6 Elective**

three additional subjects are typically taken in the junior or senior year

[1] 6.011 also requires a probability prerequisite

This is a common roadmap for 6-1, but many permutations are possible. For instance, there is a significant amount of flexibility in what order students take their foundations, and in whether they finish their foundations before taking any headers.

Semester 1: Programming skills, Differential Equations

Semester 2: Introduction to EECS, Foundation #1

Semester 3: Foundation #2, Foundation #3

Semester 4: Header #1, Header #2

Semester 5: Header #3, AUS #1

Semester 6: AUS #2, Course 6 Elective #1

6.UAT or 6.UAR and the second Course 6 elective are typically taken at some point during semesters 4-6

6-2: Electrical Engineering and Computer Science

The 6-2 curriculum builds primarily on the **Physics II and Calculus II GIRs**; not all courses require a GIR as a pre-requisite

advanced undergraduate subjects
build on header material; exact pre-requisites vary

- **Advanced Undergraduate Subject**
- **Advanced Undergraduate Subject**

- **Course 6 Elective**
- **Course 6 Elective**
- **Communication** 6.UAT or 6.UAR

three additional subjects are typically taken in the junior or senior year

students choose three **header subjects**, which typically rely on a foundation course as a pre-requisite

- **Electromagnetic Fields** 6.014
- **Cellular Neurophysiology** 6.021
- **Signals and Systems** 6.011
- **Nanoelectronics** 6.012
- **Electromagnetics** 6.013
- **Machine Learning** 6.036
- **Computer Systems** 6.033
- **Algorithms and Computation** [2] 6.045 or 6.046
- **Artificial Intelligence** 6.034
- **Software Construction** 6.031

exact pre-requisites vary; most EE headers rely on at least one EE foundation

exact pre-requisites vary; most CS headers rely on at least one CS foundation

students choose three **foundation subjects**, which build on introductory material

- **Circuits** 6.002
- **Signals** 6.003
- **Inference** 6.008
- **Computation Structures** 6.004
- **Programming** 6.009
- **Algorithms** 6.006

introductory subjects
introduce students to the breadth of our department, and teach fundamental skills for electrical engineering and computer science

- **Differential Equations** 18.03 or 2.087
- **Introduction to EECS** 6.01 or 6.02 or 6.03 or 6.08
- 6.01 and 6.02 only
- **Programming Skills** 6.0001 or (6.145 + (6.01 or 6.08))

Electrical Engineering Subjects | **EECS Subjects** | **Computer Science Subjects**

students must choose headers and foundations to span the breadth of EE, EECS, and CS[1]

[1] of the headers and foundations, two must be from EE, two from CS, and one from EECS
[2] 6.045 and 6.046 also require 6.042, either as a direct pre-req or as a pre-req to 6.006

This is a common roadmap for 6-2, but many permutations are possible. For instance, there is a significant amount of flexibility in what order students take their foundations, and in whether they finish their foundations before taking any headers.

Semester 1: Programming skills, Differential Equations

Semester 2: Introduction to EECS, Foundation #1

Semester 3: Foundation #2, Foundation #3

Semester 4: Header #1, Header #2

Semester 5: Header #3, AUS #1

Semester 6: AUS #2, Course 6 Elective #1

6.UAT or 6.UAR and the second Course 6 elective are typically taken at some point during semesters 4-6

6-3: Computer Science and Engineering

The 6-3 curriculum builds primarily on the **Calculus II GIR**; not all courses require a GIR as a pre-requisite

advanced undergraduate subjects
build on header material; exact pre-requisites vary

Advanced Undergraduate Subject

Advanced Undergraduate Subject

header subjects typically rely on a foundation course as a pre-requisite

Artificial Intelligence and Machine Learning
6.034 or 6.036

Computer Systems
6.033

Software Construction
6.031

Algorithms and Computation
6.045 or 6.046

foundation subjects build on introductory material

Computation Structures
6.004

Programming
6.009

Algorithms
6.006

introductory subjects
introduce students to the breadth of our department, and teach fundamental skills for electrical engineering and computer science

Introduction to EECS
6.01 or 6.02 or 6.03 or 6.08

Discrete Math
6.042

Programming Skills
6.0001 or
(6.145 + (6.01 or 6.08))

Communication
6.UAT or 6.UAR

Course 6 Elective

two additional subjects are typically taken in the junior or senior year

This is a common roadmap for 6-3, but many permutations are possible. For instance, there is a significant amount of flexibility in what order students take their foundations, and in whether they finish their foundations before taking any headers.

Semester 1: Programming skills, Discrete math

Semester 2: Introduction to EECS, Foundation #1

Semester 3: Foundation #2, Foundation #3

Semester 4: Header #1, Header #2

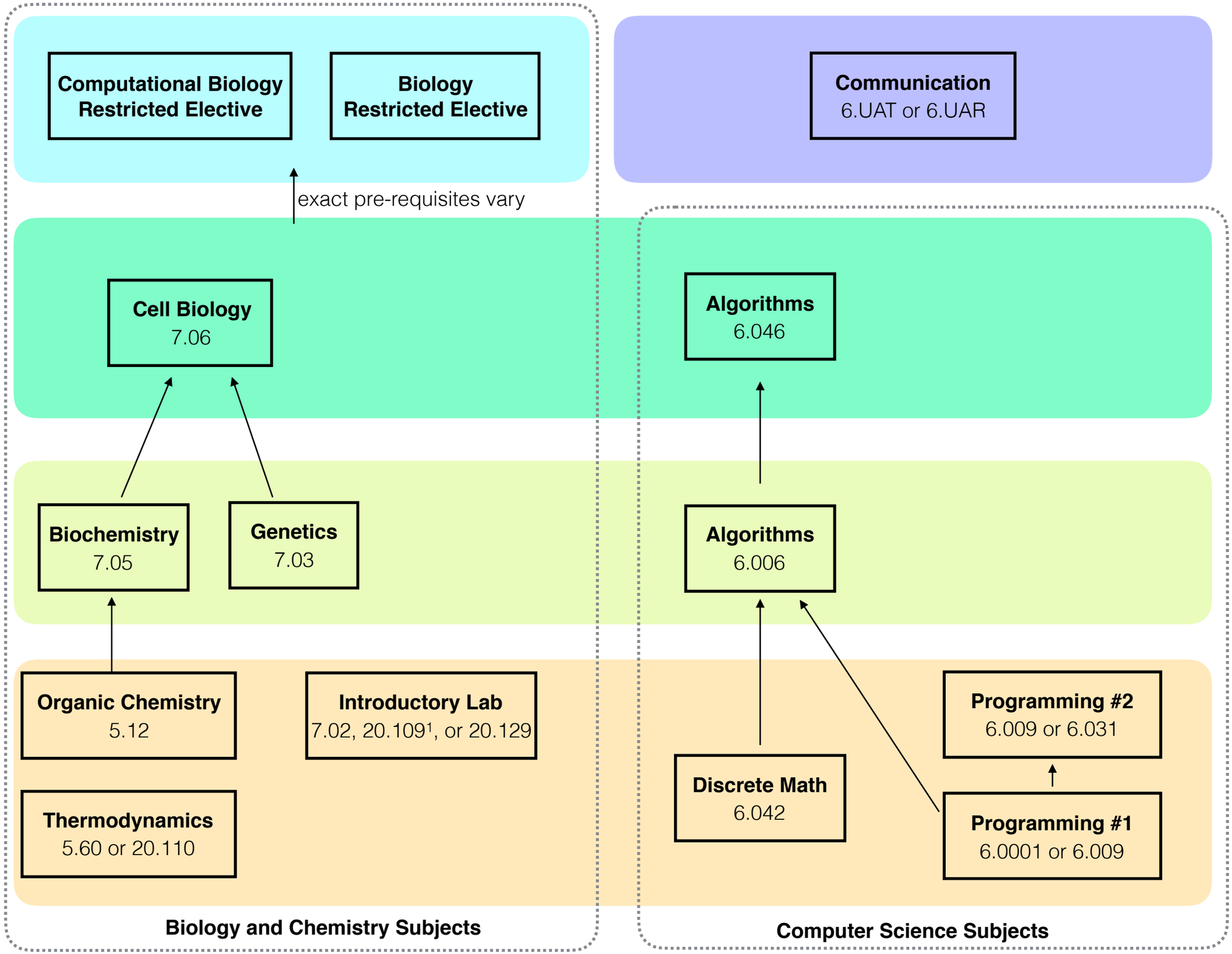
Semester 5: Header #3, Header #4

Semester 6: AUS #1, AUS #2

6.UAT or 6.UAR and the Course 6 elective are typically taken at some point during semesters 4-6

6-7: Computer Science and Molecular Biology

The 6-7 curriculum builds primarily on the **Chemistry and Biology GIRs**; not all courses require a GIR as a pre-requisite



[1] 20.109 has additional pre-requisites

This is one possible roadmap for 6-7, but many permutations are possible. For instance, there is a significant amount of flexibility in what order students take their introductory courses

Semester 1: Programming #1, Discrete math

Semester 2: Programming #2, Organic Chemistry, Thermodynamics

Semester 3: Intro Lab, Genetics

Semester 4: Biochemistry, Algorithms

Semester 5: Cell Biology, Algorithms

Semester 6: Computational Biology REST, Biology REST

6.UAT or 6.UAR is typically taken at some point during semesters 4-6

6-14: Computer Science, Economics, and Data Science

The 6-14 curriculum builds primarily on the **Calculus II GIR**; not all courses require a GIR as a pre-requisite

Data Science Elective

Economics Theory Elective

Data Science or Theory Elective

exact pre-requisites vary

Intermediate Economics
14.05, 14.18, or 14.33

Networks and Optimization
6.207, 6.215, or 15.053

exact pre-requisites vary

Microeconomics
14.01 or 14.03

Econometrics
14.32

Linear Algebra
18.06

Probability and Statistics
6.041, 14.30, or 18.600

Economics and Data Science Subjects

Communication
6.UAT, 6.UAR, or 15.276

Advanced Algorithms
6.046

Algorithms
6.006

Machine Learning
6.036

Discrete Math
6.042

Programming #2
6.0002 or 6.009

Programming #1
6.0001

Computer Science Subjects

This is one possible roadmap for 6-14, but many permutations are possible. For instance, there is a significant amount of flexibility in what order students take their introductory courses

Semester 1: Linear Algebra, Discrete Math, Programming #1 + #2 (if 6.0002)

Semester 2: Probability and Statistics, Programming #2 (if 6.009), Microeconomics

Semester 3: Algorithms, Econometrics

Semester 4: Machine Learning, Advanced Algorithms

Semester 5: Intermediate Economics, Networks and Optimization, Elective #1

Semester 6: Elective #2, Elective #3

The communications class is typically taken at some point during semesters 4-6