# Concentration Contract: A.B. in Computational Biology

**Name**

**Graduation Year**

**General Instructions**: fill this out as well as possible, then complete it with your concentration advisor and have her or him sign it. Put in *only* those courses used for the concentration. Put check marks in the boxes in the leftmost column for those courses that have been completed. Any changes to your contract must be initialed and dated by your advisor. The contract must be reviewed and reapproved yearly. (If there are no changes, review is still required, but approval is automatic.)

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<tr>
<th>Completed</th>
<th>Will take when</th>
<th>Placement</th>
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## Prerequisites

- **MATH 0100 (Introductory Calculus II)**
- OR
- **MATH 0170 (Advanced Placement Calculus)**
- **BIOL 0200 (The Foundation of Living Systems)**

## General Core Requirements

### Biology

- **BIOL 0470 (Genetics)**
- **BIOL 0280 (Introduction to Biochemistry)**
- OR
- **BIOL 0500 (Intro to Cell Biology)**

### Chemistry

- **CHEM 0330 (Equilibrium, Rate and Structure)**
- OR
- **CHEM 0350 (Organic Chemistry)**

### Computer Science

- **CSCI 0150 (Intro to Object-Oriented Programming & Comp. Sci.)**
- **CSCI 0160 (Intro to Algorithms and Data Structures)**
- OR
- **CSCI 0170 (CS: Integrated Approach I)**
- **CSCI 0180 (CS: Integrated Approach II)**
- OR
- **CSCI 0190 (Programming with Data Structures and Algorithms)**
- (180, 320, 330, 510, or any 1000 level CSCI course)

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**Note**: If there are no changes, review is still required, but approval is automatic.
### Probability and Statistics

- **APMA 1650 (Statistical Inference I)**
  - Fall _________
  - **OR**
  - **CSCI 1450 (Intro to Probability & Computing)**
  - Fall _________
  - **OR**
  - **MATH 1610 (Probability)**
  - Spring/Fall _________

### Computational Biology Core Course Requirements

- **CSCI 1810 (Computational Molecular Biology)**
  - Fall _________
- **APMA 1080 (Statistical Inference in Molecular Bio and Genomics)**
  - Spring _________

### AND

Two of the following:

- **CSCI 1820 (Algorithmic Foundations of Computational Biology)**
  - _________
- **BIOL 1430 (Computational Theory of Molecular Evolution & Population Genetics)**
  - Fall _________
- **BIOL 1465 (Human Population Genomics)**
  - _________
- **CSCI 1420 (Machine Learning)**
  - Fall _________
- **APMA 1690 (Computational Probability & Statistics)**
  - Fall _________
- **APMA 1660 (Statistical Inference II)**
  - Spring _________
- **_________________________**
  - _________

(With approval by Director of the concentration)

### University Writing Requirement:

As part of Brown's writing requirement, all students must demonstrate that they have worked on their writing both in their general studies and their concentration. There are a number of ways for Computational Biology concentrators to fulfill these requirements:

- Writing an Honors Thesis
- Taking a “WRIT” course in the final two years

### Capstone Experience

Students enrolled in the computational biology concentration will complete a research project in their senior year under faculty supervision. The themes of such projects evolve with the field and the technology, but should represent a synthesis of the various specialties of the program. The requirements are either one semester of reading and research with a CCMB Faculty member or approved advisor, or a 2000-level Computational Biology course.
Honors

In order to be considered a candidate for honors, students will be expected to maintain an outstanding record, with no "C's" in concentration courses and with a minimum of an "A-" average in concentration courses. In addition, students should take at least one semester, and are strongly encouraged to take 2 semesters, of reading and research with a CCMB faculty member or approved advisor. Students must submit to a public defense of their theses to be open to the CCMB community.

- Students seeking honors are advised to choose a Thesis Advisor prior to the end of their Junior year
- Students must complete the Honors Registration form for Comp Bio and submit it to CCMB@BROWN.EDU (Oct 1 for May graduates, Feb 15 for December graduates)

Any deviation from these rules must be approved by the director of undergraduate studies, in consultation with the student's advisor.

The above is my plan for meeting the degree requirements. It is my responsibility to make certain that all courses taken at Brown for concentration credit, all courses taken at other schools for which transfer credit has been approved for concentration credit and all AP credits appear on my transcript.

__________________________  __________________________
Student Signature               Advisor Signature

__________________________  __________________________
Date                       Advisor Name (printed)

Reviewed and reapproved (at yearly meeting with concentration advisor):

__________________________  __________________________
Student Signature               Advisor Signature

__________________________  __________________________
Date                       Advisor Name (printed)

Reviewed and reapproved (at yearly meeting with concentration advisor):

__________________________  __________________________
Student Signature               Advisor Signature