Computational Neuroscience Track worksheet
(14 courses required or 15 for Honors)

Math and Statistics (3 courses)
☐ 3. Statistics 110

Computer Science (2 courses)
☐ 4. CS 50
☐ 5. CS 51 or 61

Foundational Biology (2 courses)
☐ 6. Any one of the following:

<table>
<thead>
<tr>
<th>LS 1a or LPSA</th>
<th>LS 2</th>
<th>MCB 60</th>
<th>MCB 63</th>
<th>MCB 64</th>
<th>MCB 65</th>
<th>MCB 68</th>
<th>OEB 53</th>
<th>SCRB 20</th>
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☐ 7. One approved 100-level HEB, MCB, OEB, or SCRB course (or any second course from the box above)

Neurobiology (5 courses)
☐ 8. MCB 80 or 81 Neurobiology of Behavior
☐ 9. MCB 105, MCB 115, or Neuro 120
☐ 10. Additional Quantitative Elective:

<table>
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<tr>
<th>BME 130</th>
<th>MCB 105</th>
<th>MCB 115</th>
<th>MCB 131</th>
<th>Neuro 120</th>
<th>Neuro 130</th>
<th>Physics 141</th>
<th>Psych 1401</th>
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<tbody>
<tr>
<td>Neural Control of Movement</td>
<td>Systems Neuroscience</td>
<td>Cellular Basis of Neuronal Function</td>
<td>Computational Neuroscience</td>
<td>Introductory Computational Neuroscience</td>
<td>Visual Recognition</td>
<td>Physics of Sensory Systems</td>
<td>Computational Cognitive Neuroscience</td>
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</tbody>
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Modeling and Analysis (2 courses) Any two courses from our approved list:
https://www.mcb.harvard.edu/undergraduate/neurobiology/neurobio-courses/?course-button=compneurotrack

☐ 13. ________________________
☐ 14. ________________________

Honors – optional
☐ 15. Neurobiology 91 Laboratory Research or LS100 Experimental Research or completion of a senior thesis
**Computational Track Electives**

The following list of classes count as modeling/analysis electives for students on the Computational Neuroscience Track. Additional courses may be petitioned for approval.

Stat 108: Computing Software  
Stat 111: Theoretical Inference  
Stat 121: Data Science  
Stat 131: Time Series  
Stat 139: Linear Models  
Stat 171: Stochastic Processes  
Stat 220: Bayesian Data Analysis  
Stat 149: Generalized Linear Models

ENG-SCI 115/APM: Mathematical Modeling  
ENG-SCI/APM 121: Intro to Optimization  
ENG-SCI 155: Biological Signal Processing  
ENG-SCI/APM 158: Feedback Control of Dynamical Systems

MCB 111: Mathematics in Biology  
MCB 112: Biological Data Analysis  
MCB 198: Advanced Math Techniques for Modern Biology

APM 50: Intro to Applied Mathematics  
APM 104: Series Expansions and Complex Analysis  
APM 105: Ordinary and Partial Differential Equations  
APM 107: Graph Theory and Combinatorics  
APM 108: Nonlinear Dynamical Systems  
APM 111: Intro Scientific Computing  
APM 120: Applied Linear Algebra and Big Data

CS 108: Intelligent Systems: Design and Ethical Challenges  
CS 109: Intro to Data Science  
CS 121: Intro to Theory of Computation  
CS 124: Data Structures and Algorithms  
CS 125: Algorithms and Complexity  
CS 143: Computer Networks  
CS 181: Machine Learning  
CS 182: Artificial Intelligence