Computer Music Concentration

Symbolic Systems majors must complete the following requirements in addition to the Core requirements to fulfill the Concentration in Computer Music. All courses must be taken for 3 units of more. Core requirements fulfilled by a course are noted in brackets "[]". "ASSR" denotes courses that fulfill the Advanced Small Seminar Requirement.

NOTE: Students with a particular interest in the computational side of this Concentration are strongly urged to take either CS 107 or 107E for the Core Post-CS 106B Computation requirement, or as a Contingent Elective.

1. **Computer-Generated Music I.**
   - MUSIC 220A: Fundamentals of Computer-Generated Sound

2. **Computer-Generated Music II.**
   - MUSIC 220B: Compositional Algorithms, Psychoacoustics, and Computational Music

3. **Music and the Mind & Brain.** One of the following:
   - MUSIC 1A. Music, Mind, and Human Behavior
   - MUSIC 251. Psychophysics and Music Cognition,
   - MUSIC 351A. Seminar in Music Perception and Cognition I
   - MUSIC 351B. Seminar in Music Perception and Cognition II
   - PSYCH 30. Introduction to Perception [Cognition Language & Neuroscience]
   - PSYCH 50. Introduction to Cognitive Neuroscience [Cognition Language & Neuroscience]

4. **Music HCI/Design.**
   - CS 147: Introduction to Human-Computer Interaction Design [Post-CS 106B Computation, Cross-Area Requirement]
   - MUSIC 128: Stanford Laptop Orchestra: Composition, Coding, and Performance (CS 170)
   - MUSIC 250A: Physical Interaction Design for Music
   - MUSIC 256A: Music, Computing, Design I: Art of Design for Computer Music (CS 476A)

5. **Integrative Requirement.** Must be completed no earlier than the Junior Year:
   - Any of the **Standard Options** for all Concentrations specified under the Core Capstone requirement, or
   - A **Concentration-Specific Integrative Course** -- a course that integrates the themes of the Concentration with the Core requirements. One of the following
[with more options to be added as they are approved -- some options may be
removed if they are included in the list of SYMSYS 195* project courses, in order
to avoid redundancy with the Standard Options]:

■ MUSIC 128: Stanford Laptop Orchestra: Composition, Coding, and
  Performance (CS 170)
■ MUSIC 220C. Research Seminar in Computer-Generated Music [ASSR]
■ MUSIC 250A: Physical Interaction Design for Music
■ MUSIC 251: Psychophysics and Music Cognition
■ MUSIC 253.: Symbolic Musical Information (CS 275A)
■ MUSIC 254: Music Query, Analysis and Style Simulation (CS 275B)
■ MUSIC 256A: Music, Computing, Design: The Art of Design (CS 476A)
■ MUSIC 257: Neuroplasticity and Musical Gaming
■ MUSIC 351A: Seminar in Music Perception and Cognition I [ASSR]
■ MUSIC 364: Data-driven Research in Music Cognition

6. **Contingent Electives.** If any of requirements 1-5 are fulfilled with courses taken for
Core requirements, then additional approved Contingent Elective courses must be
completed to total 5 courses beyond those that are taken for the Core. These electives
can be one or more courses from any of the areas above, or which are approved for a
Core requirement that the student has fulfilled with a different course, or any of the
following:
  ○ CS 108. Object-Oriented Systems Design
  ○ LINGUIST 105. Phonetics (same as LINGUIST 205A)
  ○ LINGUIST 110. Introduction to Phonetics and Phonology
  ○ MUSIC 1A: Music, Mind, and Human Behavior
  ○ MUSIC 222. Sound in Space