PhD Preliminary Breadth Course Selection Process

1) Each student must take 5 breadth courses, subject to the following constraints:
   a) At least one of "CISC 621: Algorithm Design and Analysis" or "CISC 601: Elements of
      the Theory of Computation" must be included.
   b) At least one course from each breadth area must be included.

   The breadth areas and the breadth courses included in each area are as follows:

   Area 1: Theory
   - CISC601: Elements of the Theory of Computation
   - CISC604: Logic in Computer Science
   - CISC621: Algorithm Design and Analysis

   Area 2: Systems and Networks
   - CISC650: Computer Networks II
   - CISC662: Computer Systems: Architecture
   - CISC663: Operating Systems
   - CISC672: Compiler Construction

   Area 3: Software
   - CISC640: Computer Graphics
   - CISC675: Object Oriented Software Engineering
   - CISC681: Artificial Intelligence

   Area 4: Information
   - CISC636: Bioinformatics
   - Either Machine Learning or CISC683: Introduction to Data Mining (i.e., at most
     one of these two courses can be used to fulfill the breadth requirement)
   - CISC637: Database Systems
   - CISC642: Introduction to Computer Vision

   The list of breadth courses is subject to change as approved by the CIS faculty.

2) A student must obtain an average GPA of 3.5 or higher over these 5 breadth courses. Courses
   that will be counted toward this requirement must be pre-declared as explained below.

3) At the start of every semester, a student will have to declare the courses he/she wishes to
   take that semester for satisfying the Prelims course component.
   This is done by filling the Breadth Prelims Course Registration Form, which must be signed
   by the student’s advisor, and submitted to Ms. Teresa Louise for filing.

4) A student can change courses to be counted for the Prelims course component during the free
   drop/add period but not beyond that time. The student can also drop a course for this
   component during the free drop/add period. After this period, the course will be counted
   toward the Prelims course component and the grade in that course will be counted toward the
   required average of 3.5. A grade of L or W will count the same as an F grade.
5) None of the courses counted toward the Prelims course component can be a repetition of a
course previously taken or of a course previously audited. If a student takes the same course
more than once, only the grade on the first attempt may be counted towards the Prelims
course component. The only exception is as specified in item 6) below.

6) Once the 5 required Prelims courses are completed, a student who has a grade point average
of less than 3.5 on these courses may take, with the advisor’s approval, at most one
additional course from the approved list of Prelims courses, or petition the GPC to use a
course already taken from that list. In this case, the additional course may be used to
substitute one of the original five courses making sure that the five courses used for the
Prelims satisfy all the breadth requirements. This additional course may be a repeat of the
course being substituted, with approval of the instructor teaching the repeated course. In
exceptional situations, with strong advocacy from the advisor and with justifiable reasons,
the GPC may allow one extra semester beyond the four semesters to complete this sixth
course.