

Foundational and Elective Courses for the NLM Training Program:

Biomedical Informatics is an interdisciplinary field at the juncture of biomedicine with information theories and technology. It involves the extraction of new knowledge from experience and experiment to inform basic research and scientific inquiry, patient care and clinical decision making, and public health.

The NLM requires a specific curriculum for both pre- and postdoctoral trainees.

Our program requires 2 foundational and 3 electives (advanced courses) which can be tailored to each applicant's training needs, goals, and previous levels of knowledge.

Together, these courses should define a coherent curriculum (not just a series of random courses) that reflects both the NLM domain in which an applicant's project falls, and our training grant's central emphasis of training in data-driven discovery and machine learning.

Applicants who have already taken some of the foundational and elective courses included in the list below should list these courses in their curriculum plan (course name, number, institution, date taken). However, the curriculum is not just a matter of "check this off the list."

The goal of this grant is to provide training, not to just fund a trainee's research. Therefore, if an applicant has already taken courses in that area, or has previous knowledge at a level higher than the foundation courses listed, they are to choose more advanced courses that will increase and deepen their knowledge.

Choose the same number of 2 foundation and 3 elective courses as required below; depending on your background, you may be required to take fewer than that.

The NLM Steering Committee will review the curriculum proposed by students and their mentors, and will ask them during the interview to justify the courses proposed. Changes made to the curriculum by the Committee are binding.

Please note that progress towards completion of curriculum requirements is part of the evaluation process during a trainee's annual progress review.

Trainees are expected to complete at least one course per semester.

Courses in the Responsible Conduct of Research and introductory classes in biomedical informatics (e.g. UTH's HI 5310) must be taken in the first semester possible, and definitely completed during the trainee's first year of appointment.

Please note that the list of approved courses may expand as new courses are introduced during the duration of the training program.

Foundational courses

Choose one course from each group:

Group 1:

COMP 140 (or COMP 215, COMP 200, COMP 182, CAAM 420, GS-311-406, HI 5007, or equivalent); if you have already taken an equivalent course, suggest a more advanced course from the course lists.

Group 2:

STAT 310 (or STAT 305, STAT 331, STAT 410, GS-805-403, HI 5352 or equivalent); if you have already taken an equivalent course, suggest a more advanced course from the course lists.

Classes starting with:

- *COMP/CAAM/STAT are offered at Rice University*
- *GS are offered at Baylor College of Medicine*
- *HI are offered at UT Health Science Center School of Biomedical Informatics.*

Please note that, unless the course is listed below under electives, the courses in Groups 1 & 2 are only acceptable as Foundation courses, not electives.

Elective courses:

Choose three courses that comprise a coherent plan for training as described above. Courses can be selected from any of the Gulf Coast Consortia member institutions (approved courses are by institution).

For example, a candidate may choose

- HI 5300 Introduction to Health Informatics, UT Health Science Center at Houston, School of Biomedical Informatics
- COMP 450 Introduction to Artificial Intelligence, Rice University, and
- STAT 640 Data Mining and Statistical Learning, Rice University.

Information on how to register for a course at another institution are at the bottom of this page, along with relevant links. Postdocs needing to attend a course at another institution should contact the NLM Training Program administrator Melissa at glueck@rice.edu.

In order to request that a course be added as an approved elective, you must provide a syllabus and course description NLM Training Program administrator Melissa at glueck@rice.edu before applications are due, or once an NLM trainee, well in advance of the registration period.