Masters Programs Bioinformatics Curriculum Map, Draft Fall 2014

	Oral Communication	Written Communication	Technical Competency	Problem Solving Skills	Integrated Knowledge
BNFO 600: Basic Scripting Languages	0	0	✓	✓	✓
BNFO 601: Integrated Bioinformatics	0	0	✓	✓	✓
BNFO 620: Bioinformatics Practicum	✓	0	✓	✓	✓
BNFO 621: Business & Entre preneurship Essentials	✓	✓	0	0	✓
BNFO 501: Intro to Phys Implementation of Databases	0	0	✓	✓	0
CMSC 508: Database Theory	0	0	✓	✓	0
BIOL 540: Fundamentals of Molecular Genetics	0	0	0	✓	✓
Thesis/Internship	✓, A	✓, A	✓, A	✓, A	✓, A

Bioinformatics core courses are listed.
Numbers indicate mastery level goal for each learning objective: 0=does not teach; ✓ = course addresses outcome; A = data are collected to assess student learning

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Degree Program Goals

1. Synthesize and apply interdisciplinary subject matter: The program provides a framework for the progressive development of a mastery of the interdisciplinary subject matter pertinent to bioinformatics, an ability to synthesize this information and apply it to key areas of investigation/experimentation in bioinformatics.
2. Design, implement and interpret experimental approaches: The program relates the above framework to the development of the ability to design, implement and interpret experimental approaches.
3. Develop communication skills: In addition, the program will develop skills in oral and written communication of interdisciplinary science concepts, experimental design, results and interpretation.

Learning Outcomes

Graduates will have demonstrated:

- The candidate will demonstrate the achievement of an appropriate level of oral communication skills with respect to the content, organization, logical flow, presentation and appropriate use of language incorporating the use of visual aids.
- The candidate will demonstrate the achievement of an appropriate level of written communication skill with respect to grammar, syntax, spelling and use of vocabulary to effectively present information including the use of figures, tables and citations.
- The candidate will demonstrate the achievement of an appropriate level of competence in the ability to appraise, modify and / or create and implement bioinformatics experimental protocols and to design and develop experiments.
- The candidate will demonstrate an appropriate level of ability to analyze scientific problems including pertinent datasets and design and develop appropriate methods to solve said problems.
- The candidate will demonstrate an appropriate level of knowledge of fundamentals of molecular biology, computational science, statistics, and a more detailed understanding of their individual area of internship research, including an appropriate familiarity with the research literature.