BIOINFORMATICS - MASTER OF SCIENCE

Degree Road Map

- **For students with non-computing background**
  - Semester 1: BIOL 550 Special Topics (Command Line Genomics), CSCI 4530 R Programming I, A ST 505 Statistical Inference I
  - Semester 2: CSCI 4520 Python Programming I one elective course, CSCI 5310 Bioinformatics Programming
  - Semester 3: CSCI 5860 Algorithms in Systems Biology, Master's project/thesis/internship (3 credits), one elective
  - Semester 4: Master's project/thesis/internship (3 credits)
  - For students following the **Course Work Only** option, the Master's project/thesis/internship course in Semester 3 and 4 should be changed to a course on the list and an extra course in Semester 4.
- **For students with Computer Science background**
  - Semester 1: CSCI 5505 Analysis of Algorithms, CSCI 5305 Bioinformatics, A ST 505 Statistical Inference I
  - Semester 2: CSCI 5310 Bioinformatics Programming, CSCI 5415 Introduction to Data Mining ,CSCI 5810 Advanced Software Engineering
  - Semester 3: Master's project/thesis/internship (3 credits), CSCI 5860 Algorithms in Systems Biology, and an elective
  - Semester 4: Master's project/thesis/internship (3 credits)
  - For students following the **Course Work Only** option, the Master's project/thesis/internship course in Semester 3 and 4 should be changed to a course on the list and an extra course in Semester 4.

A Suggested Plan of Study for Students (with non-computing background)

It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change.

Semester 1		**Credits**
CSCI 4530	R Programming I	3
A ST 505	Statistical Inference I	4
BIOL 550	Special Topics (Command Line Genomics)	1-3
	Credits	**8-10**
Semester 2		
CSCI 4520	Python Programming I	3
CSCI 5310	Bioinformatics Programming	3
Elective Course		3
	Credits	**9**
Semester 3		
CSCI 5415	Introduction to Data Mining	3
CSCI 5860	Algorithms in Systems Biology	3
Master's Project/Thesis or Internship		3
	Credits	**9**
Semester 4		
Master's project/thesis or internship		3
	Credits	**3**
	Total Credits	**29-31**

A Suggested Plan of Study for Students (with a Computer Science background)

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Semester 1		**Credits**
CSCI 5415	Introduction to Data Mining	3
CSCI 5310	Bioinformatics Programming	3
BIOL 566	Advanced Bioinformatics and NCBI Database	3
	Credits	**9**
Semester 2		
CSCI 5305	Bioinformatics	3
CSCI 5505	Analysis of Algorithms	3
GENE 452	Applied Bioinformatics	3
	Credits	**9**
Semester 3		
CSCI 5810	Advanced Software Engineering	3
CSCI 5860	Algorithms in Systems Biology	3
Elective Course [1]		3
	Credits	**9**
Semester 4		
Master's project/thesis or internship		3
Elective Course [1]		3
	Credits	**6**
	Total Credits	**33**