# . Students must apply and be accepted t

_____ before beginning or declaring this certificate

The certificate program requires at least 20 credits, described as follows. Satisfactory completion of the certificate satisfies the Dietrich School of Arts and Sciences requirement of a related area.

## Research courses
Students must complete three additional terms of research, of a total of at least eight credits in research courses. The final two terms of research must be with the same faculty mentor. Research courses include:
BIOSC 1903 Undergraduate Research
BIOSC 1904 Undergraduate Honors Research
NROSCI 1901 Independent Study
NROSCI 1961 Thesis Research

## Quantitative skills courses
Select three courses from the following list
BIOSC 1545 The Mathematics of Biology
MATH 0220 Analytical Geometry and Calculus 1
MATH 0230 Analytical Geometry and Calculus 2
MATH 0280 Introduction to Matrices & Linear Algebra
MATH 0290 Applied Differential Equations
MATH 1380 Math Biology
STAT 1000 Applied Statistical Methods
STAT 1221 Applied Regression
STAT 1211 Applied Categorical Data Analysis
STAT 1231 Applied Experimental Design
STAT 1241 Applied Sampling
STAT 1311 Applied Multivariate Analysis
STAT 1321 Applied Time Series
BIOST 2041 Introduction to Statistical Reasoning
BIOST 2011 Principles of Statistical Reasoning
BIOST 2012 Bayesian and Empirical Bayes Statistics

## History and Philosophy of Science courses
Select one course from the following list
HPS 0427 Myth and Science
HPS 0437 Darwinism and its Critics
HPS 0430 Galileo