Data Science and Analysis BS, Biology Emphasis

General Education Requirements
Students must satisfy the university general education requirements. Many of the courses for the degree may be used to fulfill math proficiency, information literacy, social science, and math and life/natural sciences requirements. There is no foreign language requirement for the degree.

Satisfactory/Unsatisfactory Option
Courses required for the major may not be taken on a satisfactory/unsatisfactory basis.

Degree Requirements
The BS in Data Science and Analysis consists of a set of core courses along with an emphasis area.

Core Course
MATH 1800 or MATH 1100

Statistics Course
The Introduction to Statistics course should align with the student's Discipline Emphasis Area.

Choose one of the following:
- SOC/ANTHRO 3220
- BIOL 4122
- ECON 3100
- CRIMIN 2220
- MATH 1320
- PSYCH 2201
- POL SCI 3000
- SCMA 3300
- MATH 4005
- CMP SCI 1250
- CMP SCI 4200
- CMP SCI 4342

Total Hours 3

Emphasis Area Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1821</td>
<td>Introductory Biology: Organisms and the Environment (MOTR BIOL 150L)</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 1831</td>
<td>Introductory Biology: From Molecules to Organisms (MOTR BIOL 150L)</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 2012</td>
<td>Genetics</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 4436</td>
<td>Applied Informatics</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose three of the following: 9

Learning Outcomes
Upon completion of the program, graduates will be able to:

- Apply knowledge of statistical data collection, analysis and quantitative modeling techniques
- Demonstrate proficiency in industry-standard programming languages that support data acquisition, retrieval and analysis
- Select, apply and build data-based models and visualizations to devise solutions to data science problems
- Effectively communicate technical results and recommendations in various formats to appropriate audiences
- Demonstrate an understanding of the fundamental principles of biology including the structure and functions of cells and their components, heredity and variation in populations, and evolution
- Apply statistical concepts and data science methods to analyze real-world problems in biology

Total Hours 25