BACHELOR OF SCIENCE
IN STATISTICS – MATH
ASSOCIATE DEGREE FOR
TRANSFER (ADT) ROADMAP

This is a sample pathway for students who transfer to San Francisco State University in the current Bulletin year with an AS-T in Mathematics. At least 12 units in the major (MATH 226, MATH 227, and MATH 228) and all lower-division GE requirements have been satisfied. Additional units in the major may have been satisfied. Check with a major advisor about the most appropriate course sequence. **Degree completion guaranteed in 60 units; see the Associate Degree for Transfer (ADT) section for more information.**

### Course

#### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 210</td>
<td>Introduction to Computer Programming (Major Core)</td>
<td>3</td>
</tr>
<tr>
<td>or CSC 309</td>
<td>or Computer Programming for Scientists and Engineers</td>
<td></td>
</tr>
<tr>
<td>MATH 325</td>
<td>Linear Algebra (Major Core)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 440</td>
<td>Probability and Statistics I (Major Core)</td>
<td>3</td>
</tr>
<tr>
<td>GE Area UD-B: Upper-Division Physical and/or Life Sciences</td>
<td>University Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Units

**15**

#### Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 301GW</td>
<td>Exploration and Proof - GWAR (Major Core)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 441</td>
<td>Probability and Statistics II (Major Core)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 448</td>
<td>Introduction to Statistical Learning and Data Mining (Major Core)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 449</td>
<td>Categorical Data Analysis (Major Core)</td>
<td>3</td>
</tr>
<tr>
<td>US History</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

#### Units

**15**

#### Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 338</td>
<td>Introduction to SAS (Major Core)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 424</td>
<td>Introduction to Linear Models (Major Core)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 442</td>
<td>Probability Models (Major Core)</td>
<td>3</td>
</tr>
<tr>
<td>GE Area UD-C: Upper-Division Arts and/or Humanities</td>
<td>U.S. and California Government</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Units

**15**

#### Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 447</td>
<td>Design and Analysis of Experiments (Major Core)</td>
<td>3</td>
</tr>
<tr>
<td>Major Emphasis (9 units) - Take Three</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>GE Area UD-D: Upper-Division Social Sciences</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

#### Units

**15**

### Total Units

**60**
### Bachelor of Science in Statistics – MATH Associate Degree for Transfer (ADT)

#### Roadmap

**Major Emphasis (9 units)**
Select three courses from one emphasis in consultation with the statistics advisor.

**Business Emphasis**
- **DS 408** Computer Simulation (3 units)
- **DS 412** Operations Management (3 units)
- **DS 604** Applied Business Forecasting (3 units)
- **DS 624** Quality Management (3 units)
- **ISYS 363** Information Systems for Management (3 units)
- **ISYS 463** Information Systems Analysis and Design (3 units)
- **ISYS 464** Managing Enterprise Data (3 units)
- **ISYS 569** Information Systems for Business Process Management (3 units)
- **ISYS 650** Business Intelligence (3 units)

**Economics Emphasis**
- **ECON 301** Intermediate Microeconomic Theory (3 units)
- **ECON 302** Intermediate Macroeconomic Theory (3 units)
- **ECON 312** Introduction to Econometrics (3 units)
- **ECON 715** Mathematical Economics (3 units)
- **ECON 731** Econometric Theory (3 units)
- **ECON 825** Applied Time Series Econometrics (3 units)

**Science Emphasis**
- **MATH 370** Real Analysis I (3 units)
- **MATH 376** Ordinary Differential Equations I (3 units)
- **MATH 400** Numerical Analysis (3 units)
- **MATH 430** Mathematics of Optimization (3 units)
- **MATH 460** Mathematical Modeling (3 units)
- **MATH 491** Game Theory (3 units)
- **MATH 493** Introduction to Actuarial Mathematics (3 units)
- **MATH 494** Non-Parametric Statistics (3 units)

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**To Do at SF State:**

Enough total units to reach 120 minimum for graduation; 40 units minimum at the upper-division level; to include the following:

**University-Wide Requirements: 9-15 Units**
- Upper-Division GE, Areas B, C, and D (9 units): Courses required for the major may double-count if approved for UD GE.
- Students entering the major with the AS-T in Mathematics are not required to fulfill SF State Studies or Complementary Studies requirements.

**Statistics Major: 39-42 units**
- MATH 226, MATH 227 and MATH 228 met in transfer; CSC 210 may have been met in transfer.
  - Core (30-33 units)
  - Emphasis (9 units) in one of the following areas of emphasis: Business, Economics, or Science. Consult with a department advisor.

**University Electives: 3 or More Units**

Depends on the number of units transferred, course choices made at the community college, and how transferred units are applied to the requirements above.