BACHELOR OF ARTS IN MATHEMATICS: CONCENTRATION IN MATHEMATICS FOR ADVANCED STUDY – MATH ASSOCIATE DEGREE FOR TRANSFER 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, 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

- **CSC 210** or **CSC 309**
  - Introduction to Computer Programming
  - or Computer Programming for Scientists and Engineers
- **MATH 301GW**
  - Exploration and Proof - GWAR
- **MATH 325**
  - Linear Algebra
- **GE Area A: Written English Communication II (A4)**
- **Upper Division GE: UD-B, UD-C, or UD-D**

**or University Elective if met in transfer**

#### Second Semester

- **MATH 335**
  - Modern Algebra
- **MATH 440**
  - Probability and Statistics I
- **Major Concentration Elective Course numbered 400 or above**
  
**or University Elective if US History met before transfer**

#### Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 310 or MATH 376</td>
<td>Elementary Number Theory or Ordinary Differential Equations I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 370</td>
<td>Real Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 435</td>
<td>Modern Algebra II</td>
<td>3</td>
</tr>
<tr>
<td>U.S. and California Government (bulletin.sfsu.edu/undergraduate-education/graduation-requirements/#usg)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Upper Division GE: UD-B, UD-C, or UD-D</td>
<td>or University Elective if US/CA Government met before transfer</td>
<td>3</td>
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</tbody>
</table>

#### Fourth Semester

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<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MATH 380</td>
<td>Introduction to Complex Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 470 or MATH 471</td>
<td>Real Analysis II: Several Variables or Introduction to Fourier and Wavelet Analysis</td>
<td>3</td>
</tr>
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<td>or University Elective if US History met before transfer</td>
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**Units** 15  

**Total Units** 60

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1. If ENG 214 or equivalent is not completed prior to transfer, MATH 301GW must be taken in a subsequent semester. Time for degree completion may be affected.
2. Major Concentration Elective Course numbered 400 or above (except MATH 475, MATH 565, MATH 576, MATH 577, MATH 578).
3. MATH 310, MATH 376, MATH 435 offered fall semesters only.
4. MATH 380, MATH 470, MATH 471 offered spring semesters only.
5. Major Concentration Elective Course numbered 400 or above except MATH 475, MATH 565, MATH 575, MATH 576, MATH 577, MATH 578.

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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: 9-18 Units**

- ENG 214 or equivalent A4 course (0-3 units) if not taken before transfer
- American Institutions (0-6 units): US History, US Government, California State and Local Government requirements if not taken before transfer
- Upper Division GE, areas B, C and D (9 units)
- Students entering this major with the AS-T in Mathematics are not required to fulfill SF State Studies requirements.
- Complementary Studies: consult with a department advisor on how transfer units and/or SF State units can be applied to ensure degree completion within 60 units.
Mathematics for Advanced Study Major: 33-36 Units

MATH 226-MATH 227-MATH 228 met in transfer; CSC 210 may have been met in transfer.

• Core (12 units)
• Concentration (21-24 units)

University Electives: Six or More Units

Depends on course choices made at the community college, how transferred units are applied to the requirements above, and course choices at SF State. Some courses may meet more than one requirement, e.g. UD GE and the major.