### Master of Science in Geographic Information Science

Graduate Advisors: Leonhard Blesius, Jerry Davis, Ellen Hines, XiaoHang Liu

### Admission to the Program

For admission to the graduate program, a student must meet the general University requirements as stated in the Bulletin. An applicant must have a baccalaureate degree from an accredited institution with a GPA of 3.25 or better in geography or a related discipline, with emphasis or experience in spatial data analysis, and have earned a grade of B or better in GEOG 603, or equivalent.

In addition to the general application and grade transcripts which are sent to the Graduate Studies Office, the department requires applicants to submit a detailed Statement of Purpose, GRE scores and two letters of recommendation. Check the department website for details on how to apply to the department; materials must be submitted in one packet. Personal interviews with the graduate advisors and appropriate department faculty are recommended.

### Written English Proficiency Requirements

The University has a requirement for written English proficiency that is to be assessed at two different levels.

#### Level One

A score of 4.0 or better on the Analytical Writing portion of the GRE is taken as an indication of Level One writing proficiency. Any student whose GRE AW is 3.5 or lower is required to undertake remedial course work, which does not appear on the Advancement to Candidacy (ATC).

#### Level Two

Satisfactory completion of GEOG 895 or GEOG 898.

### Advancement to Candidacy

In addition to fulfilling all University requirements, students must complete the required curriculum outlined below. All graduate seminars and all courses used on the Advancement to Candidacy (ATC) with the exception of Geography 895 and 898 must be taken on a letter grade basis and have earned a B— or better. Not more than three units of Special Study (GEOG 899) and 1 unit of Special Study (GEOG 699) may be included on the ATC. Each student must consult with their graduate advisor regularly and design an individual program leading towards the culminating experience requirement (thesis or research paper).

For advancement to candidacy, the student must select a culminating experience committee comprised of two or three members, at least two of whom must be full-time faculty in geography at SF State and must present a research proposal to the department.

Upper division courses offered by the department may be included with the approval of the graduate advisor. Depending on a student's background and/or objective, additional courses in geography or a related field may be required on advisement. Note: A maximum of 30% undergraduate-only courses may be used in a graduate program.

### Geographic Information Science (M.S.) – Minimum 30 units

#### Prerequisites as Needed (3 units)

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
</tr>
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<tbody>
<tr>
<td>GEOG 603</td>
<td>Introduction to Geographic Information Systems (or equivalent)</td>
<td>3</td>
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#### Program (24 units)

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>GEOG 705</td>
<td>Geographical Analysis</td>
<td>3</td>
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<tr>
<td>GEOG 801</td>
<td>Scope and Method in Geography</td>
<td>3</td>
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<tr>
<td>GEOG 815</td>
<td>Seminar in GIScience</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 896</td>
<td>Directed Reading in Geography</td>
<td>3</td>
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<tr>
<td>GEOG 789</td>
<td>GIScience Internship</td>
<td>3</td>
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Select one of the following on advisement: 3

- GEOG 751 Environmental Management
- GEOG 810 Seminar in Physical Geography (any variant: Biogeography, Climatology, or Geomorphology)
- GEOG 820 Human and Social Geography
- GEOG 832 Seminar in Urban Geography
- GEOG 858 Seminar in Environmental and Land Use Planning

Select 12–16 units on advisement from the following: 12-16

- GEOG 610 Remote Sensing of the Environment I
- GEOG 711 Remote Sensing of the Environment II
- GEOG 720 Geographical Information Systems
- GEOG 721 Geographic Information Systems for Environmental Analysis

Approved courses from among the following on advisement:

- CSC 667 Internet Application Design and Development
- CSC 675 Introduction to Database Systems
- GEOG 606 Cartography
- GEOG 625 Programming for Geographic Information Science
- GEOG 629 Coastal and Marine Applications of GIS
- GEOG 642 Watershed Assessment and Restoration
- GEOG 657 Natural Resource Management: Biotic Resources
- GEOG 702 Field Methods in Physical Geography
- ERTH 702 Quantitative Methods in Geosciences

#### Culminating Experience (3 units)

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<tr>
<th>Code</th>
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<th>Units</th>
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<tbody>
<tr>
<td>GEOG 895</td>
<td>Research Project (and Master's Comprehensive Oral Examination)</td>
<td>3</td>
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<tr>
<td>GEOG 898</td>
<td>Master's Thesis (and Oral Defense of Thesis)</td>
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### Comprehensive Oral Examination (GEOG 895)

A two-hour oral examination is required of all students using this option. One hour is devoted to the research topic (GEOG 895) and a second hour of comprehensive oral examination on the theory and applications of GIScience. The examination or either of its parts may be repeated only once. Students must have completed all course work prior to taking the oral examination, which can be scheduled only during the fall and
spring semesters. Examination guidelines are available from the graduate advisor.

**Research Proposal**

The department requires all graduate students to present a proposal of their research for culminating experience to faculty and peers within a semester of filing the Proposal for Culminating Experience. The object is to provide students with useful feedback in the critical developmental stage of the research experience. Students present a twenty minute synopsis of their research ideas to faculty and fellow graduate students focusing particularly on linking the research to a broader theoretical framework and presenting a methodology design to achieve the specifically stated objectives. This is followed by twenty minutes (maximum) for questions and comments. Proposal presentations are scheduled as needed.