Three-Year Check-In for New Programs

The creation and maintenance of graduate programs and certificates represents significant resource commitments by faculty and staff. Given these investments, in 2014 the Graduate Faculty Executive Committee (GFEC) established a “check in” process for newly approved programs and certificates prior to their first formal university review (which occurs in the fifth year.) Through this “check-in,” the GFEC hopes program faculty and staff will assess the implementation of their new program and determine what mechanisms may be needed for sustained student success.

Progress reports will be included on GFEC agendas, and program representatives may be asked to attend GFEC if additional information is requested. In the interest of brevity, please keep responses to 300 words or less.

Program Name
GIS Fundamentals Capstone Certificate

Term of First Enrollments
Fall 2018

Check-In Completed By
Robert Roth (Director) and Brittney Krauss (Graduate Program Manager)

Date Completed
28 February 2022

Academic Quality and Student Success

1. Provide an update on any changes to the program's curriculum and learning outcomes. Include a description of the program’s typical course modalities (face-to-face, online, asynchronous discussion, team or individual assignments) and if courses have evolved based on faculty or student feedback.

The GIS Fundamentals Capstone Certificate is a 12-credit, 3-course, online post-graduate program managed by the Geography Department GIS Professional Programs (GISPP). The GIS Fundamentals Capstone Certificate is one of two online certificates that replaced the successful post-graduate GIS Certificate operated over two decades since Chancellor Ward’s certificate initiative in the 1990s.

There have been no formal changes to the learning outcomes or courses of the GIS Fundamentals Capstone Certificate since the first offering in Fall 2018, however the five-year self-study of the MSc Cartography & GIS Development option (online) recommended review of learning outcomes of all named options to harmonize across programs.

2. Please reflect on the diversity of your student population using the data provided by the Graduate School. What efforts have you made to recruit a diverse student population, and what inclusion efforts have you made to ensure the success of the diverse population of students in the program? What areas of opportunity exist for future recruitment of diverse populations? (See here for Institutional statement and working definition of diversity.)

The UW-Madison Graduate School Explorer does not provide information on student diversity for capstone certificate programs, including the GIS Fundamentals Capstone Certificate. We do not collect this data internally.

The Department of Geography has taken several steps to enhance department diversity over the past several years. First, Geography dropped requirement of the GRE, a biased and expensive entrance
exam, for all graduate programs including the GIS Fundamentals Capstone Certificate. Second, Geography has convened a Climate Committee and completed a first Climate Survey across faculty, faculty associates, lecturers, post-docs, graduate students, and academic and university staff. Third, Geography has participated in campus Target of Opportunity (TOP) hires and has hired three new faculty from underrepresented groups in the past four years, in part with GISPP revenue.

Given that the GIS Fundamentals Capstone Certificate is a revenue generating program, care is needed to avoid recruitment strategies that are predatory or extractive. One idea that has been discussed but not yet implemented is to establish scholarships or paid internships for accepted students from underrepresented groups to offset program costs.

3. The GFEC is interested to learn how departments balance faculty and staff teaching loads and responsibilities between new and existing programs. Discuss how the department or program is achieving balance, and what challenges supporting multiple programs may have created for teaching, student services, advising or funding. Also of interest is information on what if any assets are shared between programs, or additional benefits that have been realized.

Students from the GIS Fundamentals Capstone Certificate, Advanced GIS Capstone Certificate, and Cartography & GIS MSc GIS Development named option can co-enroll online courses under the purview of the GISPP. Instruction for these courses is shared by six part-time Lecturers and two Faculty Associates. Student services and advising for the GIS Fundamentals Capstone Certificate are shared with other online programs under purview of the GIS Professional Programs, including the Cartography & GIS MSc GIS Development named option, the Accelerated/Non-Thesis named option, and the Advanced GIS Capstone Certificate.

The benefit of this overlap is the stackability of programs and efficiency in instructional maintenance and student advising. Challenges lie in the increased volume of students and the implementation of services across multiple programs. For example: each program has its own admissions deadlines and processes; each program requires individual student advising; each program requires graduation processing, etc.

4. Please describe how your program has ongoing and broad faculty commitment, including governance, to ensure its continued success. If applicable, reflections from faculty and staff can be included here or as an appendix. Also consider if implementation of this program is supporting the Department and/or School/College’s current strategic goals.

The GIS Fundamentals Capstone Certificate is supervised by the Department Chair (Jack Williams), the GISPP Director (Robert Roth), the GISPP Program Manager (Brittney Krauss), and the GISPP Oversight committee comprising additional faculty from the Geography Department, including the Chair of the Finance Committee and representative from the Curriculum Committee. As a result of the GIS Development named option five-year self-study, an annual GISPP retreat will be held with attendance from all face-to-face and online instructors and GISPP stakeholders to set and review the strategic goals of the GIS Fundamentals Capstone Certificate and other GISPP activities. The first retreat will be held in April 2022.

Operations and Administration

5. Explain through a brief narrative how the program has brought in NEW and ADDITIONAL students and met projected enrollment goals (required for non-pooled programs), and how overall enrollment in your related programs has remained steady (if relevant). Provide enrollment data from the past 3 years: See here for degrees & named options and here for capstone certificates. If unanticipated overlap with existing programs has resulted, discuss steps to mitigate the overlap.
*Non-pooled programs should also provide the updated budget template populated with data from the past year and current year, along with projections for the next 3-5 years. This updated budget template will also be reviewed by the Program Revenue Budget Committee.

Table 1 presents admissions and enrollment for the GIS Fundamentals Capstone Certificate since creation in Fall 2018, as well as projections into AY25. We had 40 total resident students and 47 total nonresident students since AY19. We anticipate continued but modest growth into the future. We have had 39 students graduate from the GIS Fundamentals Capstone Certificate since launch in AY18.

Table 1: Program enrollment and graduation.

<table>
<thead>
<tr>
<th></th>
<th>Enrollment (Resident)</th>
<th>Enrollment (Nonresident)</th>
<th>Graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AY18-19</td>
<td>10</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>AY19-20</td>
<td>5</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>AY20-21</td>
<td>11</td>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>AY21-22</td>
<td>14</td>
<td>14</td>
<td>Na</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>47</td>
<td>39</td>
</tr>
<tr>
<td>AY22-23 (proj)</td>
<td>15</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
<td>AY23-24 (proj)</td>
<td>16</td>
<td>16</td>
<td>25</td>
</tr>
<tr>
<td>AY24-25 (proj)</td>
<td>17</td>
<td>17</td>
<td>26</td>
</tr>
</tbody>
</table>

6. Funding Considerations

   a. For traditional/pooled programs – How is the program successfully funding its students?

   b. For non-pooled programs – Refer to the updated budget template in addressing if the program has sufficient enrollment for sustainability. Discuss the current market outlook compared to the original marketing study and plans to grow or change the program to become sustainable.

Over FY21, the GIS Professional Programs had a total program revenue of $1,143,474, with the GIS Fundamentals Capstone Certificate contributing $169,600 to this total, and a contribution to L&S of $381,120. The GIS Fundamentals Capstone Certificate has seen continued growth since first launch (FY19: $124,800, FY20: $134,400).

The geospatial industry accounted for 425,000 employees in 2010 with an anticipated growth of 35% by 2020 (http://www.esri.com/news/arcnews/summer12articles/strengthening-the-gis-profession.html). The profession currently has only a 0.6% unemployment rate (https://money.usnews.com/careers/best-jobs/cartographer). A market analysis completed by DCS in August 2021 is attached as an appendix to this report, suggesting continued market demand. There is a continued nationwide demand for employees with our graduates’ job skills, with 100% of graduates responding to our alumni survey (proctored 3-4 months after graduation) across all Cartography and GIS programs indicating they were employed full time in the geospatial industry with a median salary of $68K.

7. If the program admits international students, describe how program processes address the length of stay visa issues, online course restrictions, and needing ESL services.

The GIS Fundamentals Capstone Certificate is an online 12-credit program, thus students are not subject to the restrictions required to obtain a visa (i.e. length of stay visa issues and online course restrictions). Per the Non-Pooled Tuition Program Requirements and Process agreement submitted with the original program proposal, this program does not admit students requiring ESL services as sufficient ESL support.
is not built into the fiscal model, and an explicit MOU with the ESL provider about funding to support the ESL services does not exist.

8. Are there any issues impacting the program’s long-term sustainability? If so, what support would you like to help you succeed?

The primary challenge for long-term sustainability is support for continual maintenance of the technology-focused courses. Course maintenance will be a primary topic of discussion for the first GISPP retreat in April 2022.