A. Program Information:
Assessment Coordinator’s Name: Jon Comer
Assessment Coordinator’s Email Address: jon.comer@okstate.edu
Number of students enrolled in the program 2016-2017: 31
Number of students graduated in 2016-2017: 6 (3 MS, 3 PhD)

B. Program Mission Statement
In the box below, provide the mission statement for the program.
The M.S. and Ph.D. programs in Geography specialize in three broad areas including cultural/historical geography, resource management, and transportation/urban geography. These degree programs are designed for students to master the theoretical knowledge and skills to design, implement, and present original geographic research in oral and written form. Therefore, masters and doctoral students study geographic research methods and analysis, the history and philosophies of geography, and knowledge of current geographic research.

C. University Assessment Funds
Were university assessment funds used by the department/program for assessment activities? ☑ Yes ☐ No
The Department of Geography was awarded $1,500 (plus benefits) for the conduct of assessment towards Outcome 1 (writing ability), specifically the evaluation of student artifacts (papers) collected from graduate courses in Geography during the academic year. The funds were used to compensate two faculty members for their time reading the artifacts collected and scored against Rubric E (see departmental graduate assessment plan).

The impact of this award was two-fold. First, most other information gathered during the year is very quickly and efficiently collected by faculty members during or immediately after the various student defenses (proposals, comprehensive exams, and final thesis/dissertation defenses) and is tabulated as the year progresses. However, evaluation of artifacts from graduate courses must be read and scored individually. Compensating these individuals makes the task somewhat less onerous.

Second, with compensation available, the department is able to entice faculty members who are not on the Graduate/Assessment Committee to engage in artifact review. As a consequence, the number of faculty in the department engaged more directly with assessment is expanded beyond the 3-person Graduate/Assessment Committee.

D. Student Learning Outcomes
The pages that follow list the Student Learning Outcomes associated with the program identified in this assessment form.
D1) Student Learning Outcome #1: Graduate students will develop the ability to communicate geographic information effectively orally and in writing at the appropriate masters or doctoral level.

Identify opportunities for students to learn this outcome during the 2016-2017 academic year:
A curriculum map for the Graduate Program (see Appendix) indicates that only a few graduate courses do not assess writing. In all other courses writing quality is assessed, and in about half of those courses the instructors indicated they devoted some time to writing instruction. An overwhelming majority of courses taught/assessed writing at an intermediate level, while a few did so at the beginner level and one course at the advanced level. Thus, almost every course provides students an opportunity to develop their writing, and some include oral presentations as well (these were not mapped).

How many students were included in the assessment of this outcome?
Nine students defended dissertation or thesis proposals during the school year, and all nine were assessed.
All defenses are likewise evaluated for oral communications, and there were 14 students assessed in this dimension (nine proposals, five final theses, two final MS theses, and three doctoral dissertations).
Additionally, 30 student artifacts by Geography graduate students from GEOG graduate courses/seminars were obtained for assessment and evaluated by two departmental readers (paid with Assessment funds during summer 2017 with FY17 funds).

How were students selected to participate in the assessment of this outcome?
All students defending a proposal were assessed by their committee members with Rubric E (written proposals) and Rubric J (oral presentation); see departmental assessment plan for these rubrics. Nearly all faculty members successfully returned their rubrics to the Assessment Coordinator, with only 2 out of 88 possible assessments not submitted over the past year.
Additionally, all instructors of Geography courses with graduate student enrollments and graduate credit (4000*, 5000, or 6000-level) were asked for artifacts from one assignment during the semester, resulting in 30 total artifacts (but representing fewer than the 31 students in the program since most students were enrolled in multiple courses during the year). No sampling was used.

Assessment Methods
☐ Survey
☐ Rating of skills (e.g., rubrics)
☐ Analysis of written artifacts
☐ Comprehensive, certification, or professional exam(s)
☐ Oral presentation
☐ Course project
☐ Satisfaction Survey
☐ Benchmarking
☐ Measuring effectiveness relative to professional standards
☐ Review of thesis/dissertation/ creative component
☐ Capstone project
☐ Internship
☐ Interviews
☐ Performance or jury
☐ Visual collection (photos, videos, etc.)
☐ Review of student research
☐ Other (please specify):

Describe the how the assessment method was implemented, administered, and/or conducted.
All students undergoing a defense of some sort are assessed on their writing and oral presentation skills by all committee members (typically three faculty members on an MS committee and four or five on a PhD committee). Rubrics are distributed to the committee members before the defense and are usually collected afterwards, although some faculty members return them later.
As to the other component of assessment, all instructors of graduate-level courses are requested to provide all Geography student papers from one of their assignments, usually a term paper or project, for evaluation by paid summer artifact readers. These readers have both assessed artifacts in the past, and were given general instructions on the assessment of the artifacts. Instructors were not aware of any identifying student information, including level (MS or PhD), to avoid bias, although the readers were also contributors of some artifacts so likely recognized their courses and their students via their writing.

Did your department/program faculty have a goal set for this learning outcome? ☐ Yes ☒ No

Provide a summary of the results from the assessment of Learning Outcome 1.
With regards to Rubric E (proposals), the nine students assessed (seven PhD and two MS) scored comparably to recent years (dating back to 2010-11 when this assessment plan was implemented). This year’s averages of about 3.0 (on a 4-point scale) are a bit above to the longer-term average of about 2.8 but lower than last year. Paradoxically, though, the MS students outperformed the PhD
Beyond assessing student writing at defenses, the department collects all possible artifacts written by Geography graduate students in GEOG graduate courses (one per student per course), which resulted in 30 total artifacts collected during the past year. The table at right summarizes the results of this analysis over the past seven years since the assessment plan has been in effect in the department.

<table>
<thead>
<tr>
<th>Year</th>
<th>N</th>
<th>Content</th>
<th>Organization</th>
<th>Style &amp; Mechanics</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-11</td>
<td>22</td>
<td>2.14</td>
<td>2.29</td>
<td>1.98</td>
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<td>2011-12</td>
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<td>30</td>
<td>2.58</td>
<td>2.58</td>
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</tbody>
</table>

The scores show moderate variation but have largely remained (since 2011-12) in the mid-to-upper 2 range with 2013-14 setting the high bar for all three categories on the rubric. Interestingly, this year the average for all three rubric categories was identical (2.58) despite the fact that Rater #1 averaged about 1 point higher than Rater #2. Inter-rater reliability across the seven years calls some of the changes into question, as we have only once had the same pair of raters for two consecutive years (2014-15 and 2015-16). In fact, one artifact this year had a 4-point difference on a category, with one rater giving the worst score (0) and the other the highest (4) and another had a 3-point difference. Beyond these anomalies, 32% of the scores were identical and another 37% were off by 1 point, but 33% of the cases it was Rater #1 scoring lower and in just 4% of the cases it was Rater #2 scoring lower.

As one would expect, PhD students (16 in pool) generally perform better than MS students (14 in pool) on average: 2.78 versus 2.36 for Content, 2.69 versus 2.46 for Organization, and an inverted 2.53 versus 2.64 for Style & Mechanics. These scores are a bit lower than last year. Of note, raters have not known the classification of the students since 2014-15; prior to 2014-15, all artifacts were coded with “MS Student” or “PhD Student” before delivery to the raters, so perhaps that biased PhD scores upwards in the past. The figure at right, which shows the distribution of scores by student classification, reveals that slightly more PhD students received top scores of 3 and 4 on rubric categories, but MS students tallied more 1 and 2 scores. There was a single 0 score for one PhD student, the artifact with the largest difference between raters.

What do the results suggest about student achievement of this learning outcome?

Student writing quality remains one of the biggest exasperations of faculty; this is a university- and nation-wide issue but we must tackle it here on the ground in a manner over which we can exert control. The department added a writing sample to its admission materials several years ago, and has always used GRE scores and personal statements as additional evidence of the writing quality of applicants. The department has also added some courses that heavily (5423) if not exclusively (5203) focus on methods and writing, though they are not meant to be remedial. These results indicate that there has not been much change over the past five years (and beyond) and that measures taken by the department have not had any consistently measurable effect. Small numbers of students, artifacts, and ratings limit our ability to make strong statistical statements about these results, but even a qualitative review of average scores (a questionable statistical summary at best since they are ordinal 0-4 rankings on rubrics) reveals no long-term trends and also that scores remain stuck in a broad band around 3, which is “Proficient” (as defined on the rubrics) but not “Advanced” (4).

**Timeline for the Assessment**

- [x] Each Semester
- [ ] Yearly
- [ ] Every other year
- [ ] Other (please specify):
D2) Student Learning Outcome #2: Graduate students will develop apposite knowledge in geographic literature and research at the appropriate masters or doctoral level.

Identify opportunities for students to learn this outcome during the 2016-2017 academic year:
In GEOG 5403, the instructor provides students rubrics for the grading/assessment of each assignment, so that students know expectations. The rubrics correspond with the appropriate learning outcomes for the graduate program. In GEOG 5413, learning outcomes are provided in the syllabus. They are discussed at the start of the semester, and reviewed in conjunction with specific assignments throughout the semester. Students are also given grading rubrics for the different assignments and projects.

How many students were included in the assessment of this outcome?
GEOG 5403 – 4 students total (3 MS and 1 PhD)
GEOG 5413 – 3 students total, (2 MS and 1 PhD)

How were students selected to participate in the assessment of this outcome?
All Geography graduate students enrolled in the two courses were assessed.

Assessment Methods
☐ Survey  ☐ Satisfaction Survey  ☐ Internship
☒ Rating of skills (e.g., rubrics)  ☐ Benchmarking  ☐ Interviews
☐ Analysis of written artifacts  ☐ Measuring effectiveness relative to professional standards  ☐ Performance or jury
☐ Comprehensive, certification, or professional exam(s)
☐ Review of thesis/dissertation/ creative component  ☐ Visual collection (photos, videos, etc.)
☐ Oral presentation  ☐ Review of student research
☒ Course project  ☐ Other (please specify): Click here to specify.

Describe the how the assessment method was implemented, administered, and/or conducted.
Instructors of the respective courses assess their students on rubrics specific to the course, designed by them (5403 – Rubric B, 5413 – Rubric C; see departmental Graduate Assessment Plan). Instructors are provided with a copy of the rubric and instructions early in the semester, and are left to complete it at their leisure (either as the semester progresses or at the end) but are urged to separate student grades from achievements of specific benchmarks as indicated on the rubric.

Did your department/program faculty have a goal set for this learning outcome? ☐ Yes  ☒ No

Provide a summary of the results from the assessment of Learning Outcome 2.
For GEOG 5403 (Current Geographic Research) scores have been quite consistent although there was an instructor change this year. This year’s average scores for four students (three MS, one PhD) were 2.00, 3.00, 3.25, and 3.25 for the four rubric standards. All four students were scored 2 on standard 1, with standards 2-4 receiving scores all 3s and 4s.

For GEOG 5413 (History and Philosophy of Geography) average scores were very similar to the preceding three years, with averages between 2.00 and 3.00 and all scores for all five rubric standards being either a 2 or a 3 for all three students. The same instructor has taught the course since the initiation of this assessment plan in 2010-11.

What do the results suggest about student achievement of this learning outcome?
5403: A new instructor took over in Spring 2017, so accurate comparison to previous cohorts’ performances is not readily feasible. The instructor closely followed the course format according to the previous instructor’s 2016 syllabus. The class size was small, with three incoming M.S. students and one Ph.D. student. Only two of the M.S. students held undergraduate Geography degrees; a third M.S. student held a degree in a related environmental discipline, and the Ph.D. student held a Master’s in an interdisciplinary degree. As established in the previous instructor’s syllabus, students were required to email discussion questions over assigned readings to the instructor by noon on the day of the discussion. This seemed adequate to keep students on schedule, but questions over articles sometimes seemed rushed and superficial, and the instructor often ended up doing most of the talking. The small size and aggregate newness to Geography probably also reduced the range of discussion (LO#1). Students generally struggled to identify connections between current geographical research and Geography’s twentieth-century evolution in terms of its research traditions, or its more influential scholars and institutions (LO#2). The instructor spent a great deal of time focusing on the expectations and
process of developing the research proposal (LO#3), and was satisfied with the students’ performance toward developing their own, but students’ extant knowledge of tools and methods associated with conducting a literature review (LO#4), especially in terms of scrutinizing source quality, was surprisingly lower than anticipated.

5413: The small class size this year definitely helped to break the ice and made the students feel more comfortable during our class discussions and presentations. In the aggregate, this cohort struggled a bit more than cohorts in previous years with learning about the major geographic works and leading figures in the discipline (Standard 2 on the rubric). There are three possible reasons for this. One may simply be the amount of material—including people and their works. The history of geography is extensive, and the major works are numerous and diverse in their approaches and topics. (However, the instructor does work to keep the amount of material covered roughly the same from year to year.) The other possible reason relates to the nature of the midterm exam. The instructor re-introduced use of an oral midterm exam this year. Although the exam is almost identical to the written version of the exam, student performance on the oral exam has consistently been weaker than on the written version. Alternatively, this cohort may simply have been less interested in the specific content covered. It seems likely that a combination of these factors may have come into play. As for performance on the other standards, this cohort was comparable to or slightly lower than cohorts in previous years.

**Timeline for the Assessment**

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<thead>
<tr>
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<th>Each Semester</th>
<th>Yearly</th>
<th>Every other year</th>
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<tr>
<td>Other</td>
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</table>

(please specify):
D3) Student Learning Outcome #3: Graduate students will develop skills in tools for geographic data collection and methods of analysis at the masters or doctoral level.

Identify opportunities for students to learn this outcome during the 2016-2017 academic year:
In 2015-16, very small numbers of students in required courses, and just one PhD student, made assessment of this outcome infeasible since any summary results would be very susceptible to the influence of one individual, and confidentiality of the one PhD student would not be possible.

How many students were included in the assessment of this outcome?
GEOG 5303 – 5 students total (4 MS and 1 PhD)
GEOG 6313 – 0 students (not taught in 2016-17)

How were students selected to participate in the assessment of this outcome?
All Geography graduate students enrolled in the two courses were assessed.

Assessment Methods
☐ Survey
☒ Rating of skills (e.g., rubrics)
☐ Analysis of written artifacts
☐ Comprehensive, certification, or professional exam(s)
☐ Oral presentation
☒ Course project
☐ Satisfaction Survey
☐ Benchmarking
☐ Measuring effectiveness relative to professional standards
☐ Review of thesis/dissertation/creative component
☐ Capstone project
☐ Internship
☐ Interviews
☐ Performance or jury
☐ Visual collection (photos, videos, etc.)
☒ Review of student research
☐ Other (please specify): Click here to specify.

Describe the how the assessment method was implemented, administered, and/or conducted.
Instructors of the respective courses assess their students on rubrics specific to the course, designed by them (5303 – Rubric A, 6313 – Rubric D; see departmental Graduate Assessment Plan). Instructors are provided with a copy of the rubric and instructions early in the semester, and are left to complete it at their leisure (either as the semester progresses or at the end) but are urged to separate student grades from achievements of specific benchmarks as indicated on the rubric.

Did your department/program faculty have a goal set for this learning outcome? ☐ Yes ☒ No

Provide a summary of the results from the assessment of Learning Outcome 3.
For GEOG 5303 (Geographical Analysis I) scores in 2016-17 higher than in the past – averages for the five standards ranged between 3.2 and 3.8. The same instructor has taught the course every time.

What do the results suggest about student achievement of this learning outcome?
5303: As the rubric scores have risen over time, the instructor feels there have been improvements in the course due to his greater emphasis on both instruction (and instructions) in areas that were challenging for students. Fewer students are “failing” the course (C or below) and having abysmal assignment scores early in the semester, and this has partly resulted from a restructuring and resequencing of assignments to better ensure that students understand expectations and have grasped the important core concepts (such as data handling/preparation and adequate interpretations of statistical results). More detailed instruction documents (appendices to the syllabus) have been distributed as well to provide a template for doing adequate work.

Timeline for the Assessment
☐ Each Semester ☒ Yearly ☒ Every other year
☐ Other (please specify): GEOG 5303 is taught every spring, while GEOG 6313 is taught every other fall.
D4) Student Learning Outcome #4: Advanced graduate students will be able to develop geographic creative components, theses, or dissertations that marshal evidence, analyze data, and synthesize meaningful conclusions.

Identify opportunities for students to learn this outcome during the 2016-2017 academic year:
All courses in the program should, at some level, teach students these skills. Furthermore, the classic model of graduate education in which a student works closely with his or her advisor to develop a research proposal and then a final product (thesis or dissertation) remains the only logical and obvious way to impart these skills.

How many students were included in the assessment of this outcome?
Two MS students (both theses) and three PhD students (dissertations) were assessed.

How were students selected to participate in the assessment of this outcome?
All students defending a creative component, thesis, or dissertation are assessed by their committee members with Rubric F (Creative Components), Rubric G (Theses), or Rubric I (Dissertations); see departmental assessment plan for these rubrics. All but 2 faculty members returned their rubrics to the Assessment Coordinator (out of 18 possible assessments).

Assessment Methods
☐ Survey
☒ Rating of skills (e.g., rubrics)
☐ Analysis of written artifacts
☐ Comprehensive, certification, or professional exam(s)
☐ Oral presentation
☐ Course project
☐ Satisfaction Survey
☐ Benchmarking
☐ Measuring effectiveness relative to professional standards
☒ Review of thesis/dissertation/ creative component
☐ Capstone project
☐ Internship
☐ Interviews
☐ Performance or jury
☐ Visual collection (photos, videos, etc.)
☐ Review of student research
☐ Other (please specify):
Click here to specify.

Describe the how the assessment method was implemented, administered, and/or conducted.
All students undergoing a final defense are assessed on their research and writing skills by all committee members (typically three faculty members on an MS committee and four or five on a PhD committee). Rubrics are distributed to the committee members at the beginning of the defense and are usually collected afterwards, although some faculty members return them later.

Did your department/program faculty have a goal set for this learning outcome?  ☐ Yes ☒ No

Provide a summary of the results from the assessment of Learning Outcome 4.
There were two thesis defenses (Rubric G). Scores across the five categories of the rubric were very much in line with past averages, ranging between 3.0 and 4.0 (again, on a 4-point scale) and extremely similar to past years. In 2011-12 and 2012-13, however (two and four defenses, respectively), averages were a bit higher, in the 3.0 to 3.7 range. One standard that is consistently rated the lowest (four out of the last five years, including 2014-15) is the ability to write a good conclusion (Advanced/4 out of 4 definition: “Conclusion places the results of research into a larger context and thoroughly connects to future research possibilities.”). However, this year’s average of 3.17 reasonable and ranked higher than the first standard (Introductions) which averaged 3.0. Faculty remain focused on working with students one-on-one (advisor-advisee) in improving their writing and critiquing multiple drafts. Both students were given top scores of 4 by all raters on standard 4, Data and Analysis.

Curiously, the three dissertations defended during the past year averaged much lower, mostly 2.1 or 2.2 except for standard 2 (Literature Review) which averaged 2.7. Also, there were several 0s reported at least one for two of the three students, although these were all by the same faculty member who served on two of the committees and appears to rate students lower than others in the department.

What do the results suggest about student achievement of this learning outcome?
Students typically have a hard time crafting proposals that show a clear plan, grasp of the tasks necessary to complete a dissertation or thesis, and ability to clearly articulate the research questions, hypotheses, and goals. This is often the main critique delivered by committee members at proposal defenses. At the end stage, many theses and dissertation still have a lot of editing (micro and macro) before the committee can sign off on the document; too little self-editing and too few iterations with advisors and/or outside readers takes place before delivery to the committee.
Outside of largely mechanical issues, though, students rarely fail a defense, having undertaken a solid if unexceptional piece of research, and demonstrate adequate proficiency as evinced by scores that average in the low to mid-3 range, for the most part, although this year the scores were notably lower in the low 2s.

**Timeline for the Assessment**

- [x] Each Semester
- [ ] Yearly
- [ ] Every other year
- [ ] Other (please specify):
D5) Student Learning Outcome #5: Advanced PhD students will be able to identify and discuss significant geographic trends within their (three) chosen specialty areas of geography.

Identify opportunities for students to learn this outcome during the 2016-2017 academic year:
This is a very individualized area as it relates to students working with their advisors and committee members via courses, directed readings, independent study, etc.

How many students were included in the assessment of this outcome?
All six doctoral students were assessed who took comprehensive exams in 2016-17.

How were students selected to participate in the assessment of this outcome?
All doctoral students taking comprehensive exams are assessed.

Assessment Methods
☐ Survey
☒ Rating of skills (e.g., rubrics)
☐ Analysis of written artifacts
☐ Comprehensive, certification, or professional exam(s)
☐ Oral presentation
☐ Course project
☐ Satisfaction Survey
☐ Benchmarking
☐ Measuring effectiveness relative to professional standards
☐ Review of thesis/dissertation/ creative component
☐ Capstone project
☐ Internship
☐ Interviews
☐ Performance or jury
☐ Visual collection (photos, videos, etc.)
☐ Review of student research
☐ Other (please specify):

Describe the how the assessment method was implemented, administered, and/or conducted.
Faculty members sitting on the doctoral student’s research committee (minimally four, sometimes five) evaluate the student’s performance with Rubric H. Rubrics are distributed to the committee members at the beginning of the defense and are usually collected afterwards, although some faculty members return them later.

Did your department/program faculty have a goal set for this learning outcome? ☒ Yes ☐ No

Provide a summary of the results from the assessment of Learning Outcome 5.
Average scores were somewhat lower than in the past, ranging from 2.7 to 3.0 on the three Rubric H categories, but there is very little historical comparison possible. No comprehensive exams were undertaken in 2014-15 or 2012-13, and only one or two exams occurred in the other years, although there were seven exams last year. However, in absolute terms, students averaging below proficient (3) is not a desired outcome.

What do the results suggest about student achievement of this learning outcome?
Results suggest that doctoral students undertaking comprehensive exams are performing at adequate levels and are adequately prepared by their advisors and committee members before sitting for the exams, but there is room for improvement.

Timeline for the Assessment
☒ Each Semester ☐ Yearly ☐ Every other year
☐ Other (please specify):
E. Summary of Assessment Results
Describe the overall results of the program assessment and program faculty members’ interpretation of the assessment results.

Overall, results indicate that student performance is fairly consistent and that while we would always strive to see students achieving higher scores and performance, the average scores (and performance of most students) are at an acceptable level. Ultimately, a graduate student’s curriculum follows a very specialized path beyond the few core courses, and they undertake a lot of independent work, so effecting curricular changes that can target weak areas (like writing) is especially challenging at the graduate level. Overall, faculty seem satisfied with the general results but will continue to focus on teaching writing skills through examples and extensive feedback on written work.

F. Dissemination of Results
Describe the individual(s) or committee (e.g., a curriculum committee) responsible for reviewing and interpreting assessment data.

The Graduate Coordinator serves a dual role as Graduate Outcomes Assessment Coordinator and disseminates and gathers the rubrics from defenses and for the core courses (Rubrics A-D), and sends out repeated calls for artifact submission for Learning Outcome 1. He then collects, inputs, and preliminarily evaluates the data and computes summary statistics.

Describe the process for sharing and discussing assessment results with program faculty.
The Assessment Coordinator writes and circulates (via e-mail) a draft report for review and comment by all faculty in the department. This is done in early August in advance of an all-day planning conference held by the department the week before the fall semester begins, and discussion about the results, what they mean, and what to do with them subsequently occurs and is incorporated into a final draft of this report. This final draft is sent around a second time for final review before submission.

G. Program Improvements Based on Assessment
Based on the findings of this assessment, what changes are being considered or planned for the program?
At this point in time, no concrete ideas for making and changes to the program have emerged.

Based on the findings of this assessment, what (if any) changes are planned for the assessment process?
No changes are planned for 2017-18 in the process.

Describe the process for implementing these changes/planned program improvements.
Not applicable.

H. Assessment Tools
Ten rubrics are used for assessment and are not repeated here for space considerations; the rubrics can be found in the department’s Graduate Assessment Plan on file with the Office of University Assessment and Testing. A curriculum map was developed in 2013 and is given on the next page to demonstrate where major skills are taught and assessed.
## Department of Geography
### Graduate Program Curriculum Map (Core Courses)

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course name</th>
<th>Instructor</th>
<th>Learning Outcome</th>
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**Instruction Codes (T/A)**

- T = Taught
- A = Assessed

**Level Codes (L)**

- B = Beginner
- I = Intermediate
- A = Advanced

**Departmental Learning Outcomes:**

1. Graduate students will develop the ability to communicate geographic information effectively orally and in writing at the appropriate masters or doctoral level.
2. Graduate students will develop apposite knowledge in geographic literature and research at the appropriate masters or doctoral level.
3. Graduate students will develop skills in tools for geographic data collection and methods of analysis at the masters or doctorate level.
4. Advanced graduate students will be able to develop geographic creative components, theses, or dissertations that marshal evidence, analyze data, and synthesize meaningful conclusions.
5. Advanced PhD students will be able to identify and discuss significant geographic trends within their (three) chosen specialty areas of geography.