ARIZONA STATE UNIVERSITY

GENERAL STUDIES COURSE PROPOSAL COVER FORM

Course information:

*Copy and paste **current** course information from Class Search/Course Catalog.*

Academic Unit: **CLAS** Department: **Geographical Sciences & UrbPlan**

Subject: **GCU** Number: **496** Title: Geographic Research Methods Units: 3

Is this a cross-listed course? (Choose one)
If yes, please identify course(s)

Is this a shared course? (choose one) If so, list all academic units offering this course: no

Course description:
Scientific techniques used in geographic research

Requested designation: (Choose One)

*Note- a **separate** proposal is required for each designation requested*

Eligibility:

Permanent numbered courses must have completed the university's review and approval process.
For the rules governing approval of omnibus courses, contact the General Studies Program Office at (480) 965-0739.

Area(s) proposed course will serve:

A single course may be proposed for more than one core or awareness area. A course may satisfy a core area requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirement and the major program of study.

Checklists for general studies designations:

Complete and attach the appropriate checklist

- Literacy and Critical Inquiry core courses (L)
- Mathematics core courses (MA)
- Computer/statistics/quantitative applications core courses (CS)
- Humanities, Fine Arts and Design core courses (HU)
- Social and Behavioral Sciences core courses (SB)
- Natural Sciences core courses (SQ/SG)
- Global Awareness courses (G)
- Historical Awareness courses (H)
- Cultural Diversity in the United States courses (C)

A complete proposal should include:

- ☐ Signed General Studies Program Course Proposal Cover Form
- ☐ Criteria Checklist for the area
- ☐ Course Syllabus
- ☐ Table of Contents from the textbook and list of required readings/books

Contact information:

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Department Chair/Director approval: *(Required)*

Chair/Director name (Typed): Elizabeth Wentz Date: January 30, 2014

Chair/Director (Signature): Libby Wentz

Arizona State University Criteria Checklist for

LITERACY AND CRITICAL INQUIRY - [L]

Rationale and Objectives

Literacy is here defined broadly as communicative competence in written and oral discourse. **Critical inquiry** involves the gathering, interpretation, and evaluation of evidence. Any field of university study may require unique critical skills which have little to do with language in the usual sense (words), but the analysis of spoken and written evidence pervades university study and everyday life. Thus, the General Studies requirements assume that all undergraduates should develop the ability to reason critically and communicate using the medium of language.

The requirement in Literacy and Critical Inquiry presumes, first, that training in literacy and critical inquiry must be sustained beyond traditional First Year English in order to create a habitual skill in every student; and, second, that the skills become more expert, as well as more secure, as the student learns challenging subject matter. Thus, the Literacy and Critical Inquiry requirement stipulates two courses beyond First Year English.

Most lower-level [L] courses are devoted primarily to the further development of critical skills in reading, writing, listening, speaking, or analysis of discourse. Upper-division [L] courses generally are courses in a particular discipline into which writing and critical thinking have been fully integrated as means of learning the content and, in most cases, demonstrating that it has been learned.

Students must complete six credit hours from courses designated as [L], at least three credit hours of which must be chosen from approved upper-division courses, preferably in their major. Students must have completed ENG 101, 107, or 105 to take an [L] course.

Notes:

1. ENG 101, 107 or ENG 105 must be prerequisites
2. Honors theses, XXX 493 meet [L] requirements
3. The list of criteria that must be satisfied for designation as a Literacy and Critical Inquiry [L] course is presented on the following page. This list will help you determine whether the current version of your course meets all of these requirements. If you decide to apply, please attach a current syllabus, or handouts, or other documentation that will provide sufficient information for the General Studies Council to make an informed decision regarding the status of your proposal.

Proposer: Please complete the following section and attach appropriate documentation.

ASU - [L] CRITERIA

TO QUALIFY FOR **[L]** DESIGNATION,THE COURSE DESIGN MUST PLACE A MAJOR EMPHASIS ON COMPLETING CRITICAL DISCOURSE--**AS EVIDENCED BY THE FOLLOWING CRITERIA:**

YES	NO		Identify Documentation Submitted
☒	☐	**CRITERION 1:** At least 50 percent of the grade in the course should depend upon writing, including prepared essays, speeches, or in-class essay examinations. *Group projects are acceptable only if each student gathers, interprets, and evaluates evidence, and prepares a summary report*	See table of explanation

1. Please describe the assignments that are considered in the computation of course grades--and indicate the proportion of the final grade that is determined by each assignment.
2. **Also:**

Please **circle, underline, or otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information **"C-1".**

C-1

YES	NO		Identify Documentation Submitted
☒	☐	**CRITERION 2:** The composition tasks involve the gathering, interpretation, and evaluation of evidence	see table of explanation

1. Please describe the way(s) in which this criterion is addressed in the course design
2. **Also:**

Please **circle, underline,** or **otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information **"C-2".**

C-2

YES	NO		Identify Documentation Submitted
☒	☐	**CRITERION 3:** The syllabus should include a minimum of two substantial writing or speaking tasks, other than or in addition to in-class essay exams	see table of explanation

1. Please provide relatively detailed descriptions of two or more substantial writing or speaking tasks that are included in the course requirements
2. **Also:**

Please **circle, underline,** or **otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information **"C-3".**

C-3

ASU - [L] CRITERIA

YES	NO		Identify Documentation Submitted
☒	☐	**CRITERION 4:** These substantial writing or speaking assignments should be arranged so that the students will get timely feedback from the instructor on each assignment in time to help them do better on subsequent assignments. *Intervention at earlier stages in the writing process is especially welcomed*	see table of explanation

1. Please describe the sequence of course assignments--and the nature of the feedback the current (or most recent) course instructor provides to help students do better on subsequent assignments

2. **Also:**

Please **circle, underline,** or **otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information **"C-4".**

C-4

Course Prefix	Number	Title	Designation
GCU	496	Geographic Research Methods	L

Explain in detail which student activities correspond to the specific designation criteria. Please use the following organizer to explain how the criteria are being met.

Criteria (from checksheet)	How course meets spirit (contextualize specific examples in next column)	Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)

Explain in detail which student activities correspond to the specific designation criteria.

Criteria	How course meets spirit of criteria	Please present detailed evidence of how criteria are being met.
1	100% of the grade involves written presentations of student research and oral presentations of the research findings. The pilot research project is a group project worth 15% of the grade. The remainder of the assignments are all individual. Every semester, a few student projects are of sufficient quality to then evolve with more effort into a submitted refereed journal paper. This is the goal, and trying to reach this goal truly gets at the core of the literacy and critical inquiry rationale and objectives. Certainly, in order to pass this class and graduate with a geography degree, students must display outstanding writing skills, critical inquiry as they evolve a research project, analysis skills, and become a better scholar.	Assignments are grouped into two broad categories: 15% of the grade for professional assignments (cover letter writing and revising, resume/cv writing and revising, learning how to ask a professor for a letter of recommendation, writing a letter of recommendation). Then, 85% of the grade involves the equivalent of a draft of an article written for a refereed journal in the social scienes or natural sciences. Of this, 15% of the final class grade is a "dry run" of a group pilot project. In this way, students go through the basic steps of research. This pilot exercise provides them confidence in the research process. 70% of the class grade comes down to writing a journal paper. This paper is first broken down into various pieces (research problem statement, review a journal article, literature review, study site, methods). These various pieces are then graded and the student receives feedback on writing and on ontent. Then, students submit a draft of the journal article (called a large research project), and they receive feedback on how to improve writing and content. Lastly, students submit a final written product and give an oral presentation that summarizes their research.

WHAT FOLLOWS IS THE "RESEARCH FLOW" HANDOUT PROVIDED TO STUDENTS THAT EXPLAINS THE RESEARCH PROCESS THAT THEY WILL UNDERTAKE

Flow Chart on a Geography Research Project

Stage A: Identifying Something to Research

1. Curiosity about something geographical, typically based on:

a. Empirical observations, or
b. Some theory and how it might apply to the curiosity
2. Identify a "problem" that needs solving, based on the curiosity

3. Generate question(s) based on that problem

Stage B: Figuring Out if it is Something Worthy of Your Effort

4. Ask yourself whether the question(s) is important

a. Is it important to the field of geography?
b. Is it important to people
5. Do "library" research to find out whether your question has already been answered

This can be a very, very time consuming step. But the library research can help you narrow the question, if you find the question has been partially answered. The library research can also give you a lot of ideas for the next step. The library research can be accomplished at several levels of detail. Four general categories are outlined.

After you do your library research, you may end up going back to steps 1, 2, 3, or 4 and refining your ideas.

a. **Quick Search** to determine the "classic" research on the topic.

This was usually done in the past by looking at the "suggested readings" sections in textbooks. Now, you can look at the curriculum vitae (academia version of a resume) of professors in geography departments on the Internet. Or you can used very specific search strings on the Internet.

b. **Leap Frogging with Citation Indexes**

Once you obtain an old "classic" paper on your research topic, you can see all of the more recent papers that have referenced the classic piece. In human geography, you can look at "Social Science Citation Index". In physical geography, you can look at "Science Citation Index." These are found in the reference section of most college libraries.

The ASU library has on-line two wonderful tools at the http://lib.asu.edu/ website. First, click on Google Scholar (and use the get it at ASU Link). Second, click on WebofScience.

This allows you to jump into the recent past and see just who has worked on your topic recently.

c. **Prior Literature Reviews**

There are many geography journals that have period reviews of the literature on certain areas. *Progress in Physical Geography* and *Progress in Human Geography* are two good examples. You can often find detailed discussions of your research topic area.

If you have never used Refworks or Endnote, I would recommend that you take the time to learn these programs. Refworks is free through the the http://lib.asu.edu/ website. It makes your citation style perfect inside the paper and at the end.

d. **The Nuclear Option**

In most college libraries, you can find on CD *Dissertation Abstracts International*. This is a searchable database of dissertations from around the world. The abstracts are all on file. If you are lucky enough to find a dissertation on your topic area, you can order it through interlibrary loan or buy a copy. So why is this called the "Nuclear Option"? Because dissertations often have fantastic literature reviews. One aspect of a Ph.D. is to be a complete scholar in your research area. So you can read all about the scientific literature by "borrowing" a dissertation on your topic area.

Stage C: Doing the Research

6. Designing Your Geography Experiment or Data Collection

a. Narrow your study area
b. Define your assumptions
c. Indicate your dependent variables
d. Indicate your independent variables
e. Refine your general hypothesis into specific hypotheses
f. Perhaps decide to use a computer model for data input or output
g. Assess the feasibility by examining a timetable and a budget (and perhaps go back to step 6a)
7. Data Collection

a. Design your sampling
b. Decide on how to
c. Understand the limitations of your data
8. Data Analysis

a. Spatial perspective
b. Temporal perspective
c. Mathematical modeling
d. Statistical techniques

Stage D: Presentation of the Research

9. Reporting the Results

a. Photographs with clear captions
b. Charts and graphs with clear captions
c. A systematic presentation in words

10. Discussion of Results

a. Discuss how the results relate to the general curiosity and problem
b. Discuss how the results relate to the research question
c. Discuss how the results are significant for people or geography as a whole, or both
d. Discuss how the results could be used to refine the next stage in the research.

THIS GENERAL FLOW CHART OF ACTIVITY IS THEN BROKEN DOWN INTO SEVERAL ASSIGNMENTS. THIS ASSIGNMENT EXEMPLIFIES THE RIGOR OF THE PROCESS

Problem Statements: Justifying & Explaining your Research Problem & Approach

This brief, *2-4 page written assignment* will articulate your understanding of the research problem and its importance as well as your group's analytical approach to addressing a specific research question. Your problem statement paper should also include a clear introduction and a well-articulated question (i.e., with a 'who, what, where, when, why, how' type of wording and a question mark!). Finally, you must reference at least 5 sources (>2 peer-reviewed articles) in the text of your paper and in the works cited list (with full bibliographic references following the specified guidelines below and on BlackBoard) at the end.

You MUST turn in a hard copy of your assignment in *class on **XXX***. If you cannot deliver it to class, then it must be submitted to my 5th floor mailbox in Coor Hall with a date stamp to show it was on time. Otherwise, points will be deducted for lateness.

Assignment Guidelines

Substantive: *you must include…*

- An **introduction** to your group research project, with clear and compelling details and/or documentation that build up to your *specific question(s)* and illustrate its (their) importance (~1 parag.). Be sure to include the question, worded as such, but feel free to word the question in the way you think is best.
- An explanation of the '***research problem***' in terms of how your project (~2-4 parag.; see PPT notes!):
  1) addresses important societal problem(s) or challenge(s) (i.e., based on real-world issues; known as "societal impact"), and
  2) advances knowledge and/or fills gaps in scientific or geographic understanding (i.e., based on the scholarly literature; known as "intellectual merit").
  This involves presenting relevant journal articles and associated references for your project. See the Lecture Notes on Blackboard for more information about "research problems."
- A brief explanation of the research **methods** you plan to use for data collection & analyses. In other words, how will your group answer your research question? What data or information will serve as evidence for your project? (~1-2 parag.)
- A **conclusion** to your problem statement, particularly focusing on the significance of your project and any implications for enhancing knowledge and/or solving problems (~1 parag.) This might include policy or planning recommendations.

Formatting: *follow instructions below & on Blackboard*

- 2-4 double-space pages; 12-point font & 1-inch margins
- No title page, with works cited directly following conclusion (not on a separate page).
- 5 references required, at least 2 of which must be peer-reviewed journal articles

Details on References:

Below are basic guidelines for properly formatting your works cited for this assignment. Please follow the exact formatting style (e.g., capitalization, italics, punctuation), and use this format consistently. Also be sure to cite your work both in the text and at the end of your paper.

For more details on citation formatting, refer to the bibliographic resources on Blackboard, which include example citations for various types of information sources and how they should be formatted. These documents include the *Annals of the Association of American Geographers'* "Style Sheet," which is the specific formatting style we are following in this class.

Example Bibliographic References for Works Cited

Note: you MUST follow these formatting consistently throughout your citations, including the details included, ordering of information, punctuation and caps, and other formatting elements (e.g., only initials for first names).

Journal Article

Lant, C. 1998. The changing nature of water management and its reflection in the academic literature. *Water Resources Update* 110: 18-22.

Book

Kates, R.W. and I. Burton. 1986. G*eography, Resources, and Environment: Selected Writings of Gilbert F. White (Volume II)*. Chicago, IL: University of Chicago Press.

Book Chapter

Relph, E. 1997. Sense of place. In *Ten Geographic Ideas that Changed the World*, ed. S. Hanson, 205-226. New Brunswick, NJ: Rutgers University Press.

Thesis/Dissertation

Larson, K.L. 2004. *Residents' Attitudes toward Water Resource Protection in Metropolitan Portland, Oregon*. Ph.D. Dissertation, Department of Geosciences, Oregon State University, Corvallis.

Report

Institute of Metropolitan Studies (IMS). 2003. *Community GIS Initiative Final Report*. College of Urban and Public Affairs, Portland State University, Oregon.

Web Page

Metro. 2011. Sustainable Living. Portland, Oregon. http://www.oregonmetro.gov/index.cfm/go/by.web/id=24199 (last accessed 14 September 2011).

Data Source

Metro. 2003. *Metro Regional Land Information System (RLIS) CD-ROM*. Data Resource Center, Metro Regional Government. Portland, Oregon.

Examples for <u>In-Text</u> References to Works Cited

For *<u>paraphrased information</u>*, specify the author(s) and year of publication as shown here (Larson and Lach 2007; Larson et al. 2010). This means that for works with 3 or more authors, only include the first author and "et al." (as done herein) when you cite sources in the narrative.

For *<u>direct quotes</u>*, you also need to include the authors' last names and year (as indicate above), in addition to the page number from which the quote came, for example: (Larson 2009: 22).

For sentences such as, "Larson (2009) argued that…", you should include the year of publication directly after the author(s), as shown here. Also, include the page number for direct quotes.

Grading Rubric for Individual Papers: Problem Statement & Approach

	Core Elements	Writing	Sources	Citations	Length
Excellent (A) 90%-100% 180-200pts	Thoughtful, compelling discussion of research problem *including both the scientific <u>&</u> societal significance*, with the guiding question & methodological approach clearly stated.	Well-organized, clearly written & grammat-ically correct	Cites 5 sources including *at least 2 peer-reviewed journal articles*	Follows Chicago Style Guide entirely, *as provided in *Course Docs** on Blackboard	Adheres to length & formatting require-ments
Good (B) 80%-89% 160-179pts	Thoughtful discussion of research problem, *including at least the societal significance*, with your question & methodological approach clearly stated.	Clearly organized & written with only minor errors or typos	Cites 5 sources including *at least 2 peer-reviewed journal articles*	Follows the Chicago Style Guide *provided on Bb** but not entirely	Adheres to length & formatting require-ments
Fair (C) 70-79% 140-159pts	Adequate discussion of research problem, *including at least the societal significance*, though explicit question is missing &/or methodological approach unclear.	Legible but not clearly written or organized; several errors or typos	Does *not* have 5 sources but has *at least 2 journal articles*	Cites sources consist-ently <u>but not</u> using Chicago Style provided	Adheres to most length & formatting require-ments
Poor (D) 60-69% 120-139pts	Weak discussion of the research problem, with a lack of evidence or details on why topic is important. Questions or methods lacking.	Poorly written or organized; several awkward or unclear	Does not have 5 sources or >2 journal articles	Does not cite sources consist-ently	Does not adhere to length & formatting require-ments

		statements			
Very Poor (E) 0-59% 0-119pts	Inadequate discussion of the research problem, with little to no evidence or details. Questions or methods missing.	Poorly written and organized; lacks readability & clarity overall	Does not have 5 sources or >2 journal articles	Does not cite sources	Does not adhere to length & formatting require-ments

Criteria	How course meets spirit of criteria	Please present detailed evidence of how criteria are being met.
2	In the process of completing an original research project, all students end up gathering evidence. Some projects involve original field work in the gathering of data (e.g. measurements of channels, measurements of climatic parameters). Other projects involve downloading data from the CDC or the US Census. All students must interpret the evidence. They write up methods sections, where students often use statistical approaches to interpret evidence. Others use mapping strategies, typically using GIS. All students evaluate evidence in three different ways. First, they evaluate the evidence in writing the results section. Then, they evaluate the evidence in writing a discussion section where they evaluate their results in the context of the broader refereed literature. Lastly, they evaluate the evidence in terms of assessing their original problem statement/hypothesis.	The above "**Flow Chart on a Geography Research Project" i**s a summary of the various tasks that students must undertake in the gathering interpretation and evaluation of evidence. Each one of these sections in the flowchart then becomes a separate assignment, such as the above Problem Statement assignment. For example, students submit a separate research problem statement, a separate methods section, a separate literature review, and so forth.
3	The student final written research report and the student final oral	Writing the equivalent of a draft of a paper for a scientific journal is a

	research presentation are two substantive assignments.	substantive writing assignment. Actually, this assignment is broken down into several substantial assignments, such as a 10-15 page review of the refereed literature. Then, presenting the results of the research in an oral presentation is yet another substantial assignment. Certainly, many students are upset at having to present their findings orally. However, it is a core part of the scientific communication process.
4	Students turn in two drafts of their journal paper. One draft consists of various pieces where students receive a grade and feedback. A second draft is the entire journal article draft. The third draft is what is turned in for the final grade.	70% of the class grade comes down to writing a journal paper. This paper is first broken down into various pieces (research problem statement, review a journal article, literature review, study site, methods). These various pieces are then graded and the student receives feedback on writing and on ontent. Then, students submit a draft of the journal article (called a large research project), and they receive feedback on how to improve writing and content. Lastly, students submit a final written product and give an oral presentation that summarizes their research.

KEY: Evidence of the criteria for L designation are color coded in this syllabus as follow.
Criteria 1 = >50% of grade based on writing
Criteria 2 = gathering, evaluating & interpreting of information required
Criteria 3 = at least 2 writing/speaking tasks
Criteria 4 = arrangement of assignments to allow timely feedback to students

Syllabus for *Geographic Research Methods* (GCU496/71586)

Fall2013, Tuesdays and Thursdays, 1:30-2:45pm, COOR 191

Dr. Kelli L. Larson, Schools of Geographical Sciences and Urban Planning and Sustainability
Office Hours: Th 10:30am-12pm in COOR 5640, or by appointment (after class tends to be good, too)
Contact Information: 480-727-3603 or Kelli.Larson@asu.edu (email is best)

Course Objectives

The primary goals are for students to gain knowledge and experience in: 1) a broad array of research topics and methods in geographic studies and assessments, with special attention to diverse traditions in Geography and dominant themes in ASU's School of Geographical Sciences and Urban Planning; 2) the integration and application of geographic theory and concepts as well as methods of data collection and analysis in the design, execution, and presentation of a specific research project; 3) critical thinking and professional skills including the ability to review and synthesize literature, analyze data/information, and effectively present findings and conclusions in written, verbal, and visual forms; and, 4) collaborating in groups and professionally communicating with others to execute a study.

Class Requirements

****See below & Blackboard for details*

Assignments	Points	Portion of Grade
Research Projects	*700*	*70%*
Individual Assignments	(350)	(35%)
Group Assignments	(350)	(35%)
Class Participation	*200*	*20%*
Resume Assignments	*100*	*10%*
Total	**1000**	**100%**

Class Policies

Grading: Assignments are evaluated based on the content and quality of student work, following from the breakdowns herein and the instructions specified on Blackboard and in class. The grading scale is: A (90% or above), B (80-89%), C (70-79%), D (60-69%) and E/F (<59% or below). Note: *the sure-proof ways to earn below the required C in this course are to not complete assignments and to not come to class!*
Attendance: Participation in class is critical, thus, students who have a <75% attendance in class will be dropped.
Deadlines: Late assignments will not be accepted apart from extreme emergencies or circumstances with proper
documentation and my approval. Points (5) will be deducted for each day of the week assignments are past due.
Plagiarism: Copying the work of others in any assignment is unacceptable and will be disciplined according to university policy. Be sure to cite information sources following professional standards.
Integrity: Please act professionally during classroom activities and respectfully allow your classmates to express their views and perspectives. And, please, please, please, turn off your cell phones.

COURSE ASSIGNMENTS *(Additional details will be provided in class and on Blackboard.)*

Class Participation (20%): This portion of your grade will be based on 1) *attendance* (10%), including on-time arrival and full presence in scheduled class periods; and 2) *involvement* (10%), including evidence of readings and contributions to in-class exercises and group research tasks.

Resume Assignments (10%): Students will tum in their *1-page (only)* resume at the beginning and end of the term, respectively including: 1) a *working draft* (5%) with 2-3 sentences at top expressing your geographical interests *and* professional goals, and 2) a *final version* (5%) with a 1-page cover letter tailored to an actual job announcement of relevance to your interests and experience in the field of geography and/or planning.

Research Projects (70%): In the first month of the term, we will identify groups of ideally 4 students for research projects that will be a central focus of class activities and assignments. Two sets of assignments on group research topics will evaluate students' individual and collective work. Working sessions during the class period will allow groups to further their projects, but students must also communicate and complete their research outside of the classroom. Peer evaluations will assess contributions of individuals to group efforts.

Individual Assignments (35%): Students will complete these assignments independent of their groups but on the same general topic as their group research. While your ideas should be informed by the group perspective, individual students must complete the following assignments on their own.

Bibliographies (10%): Students must identify *3 information sources* on their research topics and summarize them as noted below and as discussed in class-2 *sources must be peer-reviewed journal articles,* with at least 1 from the *Annals of the Association of American Geographers* or the *Professional Geographer.* For each source, students must provide the *full bibliographic citations and 150-200 word summaries* (6%) to capture: a) the questions and goals guiding the source, including its scientific and societal importance; b) the data or information used and analyzed, c) the primary results or take-home points, and d) how the source is relevant to your group research topic. Full bibliographic citations much be formatted according to the proper professional guidelines outlined in class, with the summary for each directly following citations. With a *single PowerPoint slide* (4%), students will also present a journal article to the class on their research topic.

Research Statements (20%): This brief, *2-4 page written assignment* will articulate your understanding of your research 'problem,' project objectives, and analytical approach to address a specific research question. Note: *at least 5 references* (>2 peer-reviewed journal atticles) must be incorporated into the text and a works cited page for this short paper.

PowerPoint 1, 2, 3 Presentations (5%): Students will individually present their research problem, project goals/question(s), and methodological approach using PowerPoint (PPT), with each presentation involving *1 student, 2 slides, and 3 minutes.* Hard copies must be turned in, with *2 slides printed on I page.* Awards will be granted for the best visual and oral presentations.

Group Assignments (35%): Students will work in groups to design and execute research projects. For all group assignments, a brief note about each student's contributions is required. Although these assignments are to be complete collectively, grades are based on the quality and extent of individual contributions.

Final Research Papers (25%): A *draft paper* will account for 5% of your grade, and final papers for 20%, with: 1) *working drafts (>5 pages, >1 figure, >5 citations)* focusing on the introduction, literature/ background, and methodological sections, including a specific question and statement of the research problem; and *2) final reports* including these specifics and details on the methods of data collection/analysis and associated findings/conclusions, with no more than *15-20 double-spaced pages* excluding figures (>3 required) and works cited (>10 references required, half of which must be peer-reviewed journal articles).

Poster Presentations (10%): Students will present their research projects and findings in a conference-style poster session, with approximately *10-minute verbal presentations and large, visual posters*. Presentations must communicate research questions and background, methods and findings, and concluding points.

COURSE READINGS

The O'Conner text is available through the bookstore, and the other readings are available on Blackboard.

Geographic Research Traditions (Overview Papers)

Pattison, W.D. 1990. Introduction and Reprint of "The Four Traditions of Geography." *Journal of Geography* 202-206.

Gaile, G.L. and C.J. Willimott. 2003. Table of Contents. In *Geography in America: At the Dawn of the 21stCentury.* Oxford University Press, U.K.

Harden, C.P. 2012. Framing and reframing Questions of Human-Environment Interactions (Presidential Address). *Annals of the Association of American Geographers.* 102(4): 737-747.

Peer-Reviewed Research Publications

By ASU Faculty in the School of Geographical Sciences and Urban Planning

I. *Human-Environment Interactions:* Mixed Research Methods

Chowdhury, R.R. and B.L. Turner II. 2006. Reconciling Agency and Structure in Empirical Analysis: Smallholder Land Use in Southern Yucatan, Mexico. *Annals of the Association of American Geographers* 96(2): 302-322.

Larson, K.L., E. Cook, C. Strawhacker, and S. Hall. 2010. The influence of diverse values, ecological structure, and geographic context on residents' multifaceted landscaping decisions. *Human Ecology* 38(6): 747-761.

II. *Culture, Place, and Identity:* Qualitative Research & Case Studies

Oberle, A.P., and D.D. Arreola. 2008. Resurgent Mexican Phoenix. *Geographical Review* 98(2): 171-196.

Larson, K.L., D. Casagrande, S. Harlan, and S. Yabiku. 2009a. Residents' yard choices and rationales in a desert city: social priorities, ecological impacts, and decision tradeoffs. *Environmental Management* 44: 921-937.

III. *Earth Sciences and Sw;tainabilil)l:* Modeling & Quantitative Analyses

Balling, R.C. and P. Gober. 2007. Climate variability and residential water use in the city of Phoenix, Arizona. *Journal of Applied Meteorology & Climatology* 46: 1130-1137.

Larson, K.L., D. White, P. Gober, S. Harlan and A. Wutich. 2009b. Divergent perspectives on water resource sustainability in a public-policy-science context. *Environmental Science and Policy* 12: 2012-2023.

IV. *Spatial Sciences and GIS:* Geographical Analyses & Statistics

Wentz, E. and P. Gober. 2007. Determinants of small-area water consumption for the city of Phoenix, Arizona. *Water Resources Management* 21: 1849-1863.

Larson, K.L., D.C. Ibes, and E.D. Wentz. 2013. Identifying the water conservation potential of neighborhoods in Phoenix, AZ: an integrated socio-spatial approach. In *Geospatial Approaches to Urban Water Resources*. Ed., P. Lawrence. Geotechnologies and the Environment Series: Planning and Socioeconomic Applications. Springer, New York, pp. 11-36.

V. *Urban Dynamics and Planning:* Policy Analyses & Implications

Guhathakurta, S. and P. Gober. 2007. The impact of the Phoenix urban heat island on residential water use. *Journal of American Planning Association* 73(3): 317-329.

Larson, K.L, C. Polsky, P. Gober, H. Chang, and V. Shandas. 2013. Vulnerability of water systems to climate change and urbanization: A comparison of Phoenix, Arizona and Portland, Oregon (USA). *Environmental Management* 52(1): 179-195.

The Essentials of Good Writing

O'Conner, P. T. 2000. *Words Fail Me: What Everyone Who Writes Should Know about Writing.* Hartcourt, Inc., Orlando, FL.

Also suggested, but not required: Williams, D. R. 2004. *Sin Boldly: Dr. Dave's Guide to Writing the College Paper.* Basic Books, New York City, NY. Or see http://www.sinboldly.com/

COURSE SCHEDULE (Note: *This schedule is subject to minor changes.)*

PART I. EXPLORING PLURALISM & RESEARCH IN GEOGRAPHY: THE RESEARCH PROCESS	
Wk. 1 8/22	*Introductions & Course Expectations* – Goal: *Review class activities, assignments, and policies.*
Wk.2 8/27-29	*Discovering Geographic Research Traditions* – Goal: *Brainstorm potential topics & approaches.* The Process & Problem Statements: I. Human-Environment Interactions (Mixed Methods) READINGS: Chowdhury & Turner 2006; Larson et al. 2010
Wk.3 9/3-5	*Explaining & Justifying a Research Problem* – Goal: *Gather articles & compile bibliographies.* Theory, Constructs, & Diverse Information Sources: II. Culture, Place & Identity (Qualitative Methods) READINGS: Oberle & Arreola 2008; Larson et al.
Wk.4 9/10-12	*Developing Data & Methods of Analysis*- Goal: *Outline research plan & data/info sources.* Data Types & Analytical Approaches: III. Earth Sciences & Sustainability (Quantitative Methods) READINGS: Balling & Gober 2006; Larson
Wk. 5 9/17-19	*Analyzing Data & Presenting Geographic Information*- Goal: *Draft research outline & tasks.* Geographic & Visual Displays: IV. Spatial Sciences & GIS (Ca1io/Graphic Display/Analyses) READINGS: Wentz & Gober 2007; Larson, Ibes, & Wentz 2010
Wk. 6 9/24-26	*Addressing the Significance of Research Goals & Results* – Goal: *Gather visuals for review.* Intellectual Merit & Broader Impacts: V. Urban Dynamics & Planning (Applications) READLNGS: Guhathakutia and Gober 2007; Larson et al. 2013 **DUE** (Th): Individual Problem Statement Papers (w/ Peer Reviews).
PART II. EXECUTING RESEARCH: ANALYTICAL APPROACHES & WRITING SKILLS	
Wk. 7 I0/1-3	*Presenting Your Research: PowerPoints 1,2,3* -Goal: *Convey your research problem & goals.*
Wk. 8 10/8-10	*Developing your Methods of Data Collection & Analysis*- Goal: *Finalize research methods.*
Wk.9 10/15-	*Securing your Evidence with Data & Information Sources*- Goal: *Show me your data/evidence!*
Wk. IO 10/22-24	*Examining Geographic Phenomena with Statistics* – Goa!: *Develop draft paper outline.* Quantitative Analyses & Sampling Designs. Larson's Vignette ITI READINGS O'Conner 15-19
Wk. II I0/29-31	*Employing Spatial Analyses & Visuals in Research* – Goal: *Design visual products.* Geographical Analyses & Graphical Displays. Larson's Vignette IV READINGS O'Conner 20-25
Wk. I2 11/5-7	*Discussing Research Products &Practical Implications* – Goal: *Finish draft group paper.* Historical & Policy Analyses & Applications. Larson's Vignette V READINGS O'Conner 26-
PART III: COMMUNICAITON & PROFESSIONAL SKILLS: PRESENTATIONS, ETHICS, & THE	
Wk. I2 11/12-14	*Presenting & Finalizing Your Research* – Goal: *Refine posters & research presentations.* Wrap-Up Group Posters & Papers **DUE** (F): Final Group Posters (electronic files will be required to print posters in advance)
Wk. I3-14 11/19-21	*Polishing Your Presentation Skills & Papers* – Goal:*Finalize research products.* Final Dissemination of Research Results **DUE**: Final (Group) Poster Presentations (Tu) Resume Plus II (w/ cover letter tailored to
Wk. I5 11/26	*Looking to the Future* – Goal: *Sharpen resumes, job searches, & interview skills.* Professional Advancement in Graduate School & Various Job Sectors NO CLASS (Th)-
Wk. I6 12/3-5	*Exploring Professionalism* – Goal: *Discuss professional ethics & integrity, plus your future.* Skills, Roles & Responsibilities as Geographers, Planners & Professionals **DUE** (Tu): Final (Group) Papers

GCU 496
Spring 2014
Ron Dorn
Introduction to Geographic Research Methods
Course Number 10472
Coor 5536
Tuesday and Thursday 10:30 to 11:45

Why is this class required?

The idea behind GCU 496 is to help you with the transition from being an undergraduate geographer to your postgraduate life as a professional geographer. In constructing your assignments, I assume that you will either be trying to obtain employment in some field of geography or that you will be applying to graduate school (please read this testimonial of a top student who turned his 496 project into this article and went on to graduate school). Thus, the assignments are built in a way to help you get started with one of these two futures, while also providing you guidance in the broader liberal arts objective of how to apply your geography degree by learning how to conduct research into a geographic problem.

What are the objectives of this course and how do they relate to the course grade?

There are three major objectives. These relate to preparation as a professional geographer or as a

graduate student, and they also relate to the general goal of a liberal arts education.

Objective #1: Prepare materials for future job/graduate school applications. *[15% of the class grade]*

Objective #2: Learn how to conduct research to solve a problem (that either relates to professional employment or academic research). *[85% of class grade]*

Objection #3: Work on your literacy and critical thinking skills *[85% of class grade]*. This class fulfills the L (Literacy and Critical Inquiry) general studies requirement. First, 100% of your class grade involves writing and oral presentations, where you are individually responsible. Second, your writing and your oral presentations involve the gathering of geographic data, its interpretation and its evaluation in your research project. Third, you have multiple substantive assignments -- both writing and speaking -- in presenting your research findings. Fourth, your big research project is broken up into smaller assignments, where I can provide you feedback so that you can improve over time.

What every graduating senior asks: what is the calendar of class sessions and due dates of assignments for this course?

Class	**What is due? How much is it worth?**	**What is covered in the class session?**
Jan 14-16	nothing	• Class overview • What is your target: most likely writing a scientific research paper • Review assignments due soon • Start pilot research project - go over all of the steps. • Citation heaven or hell: There is the free ASU-purchased program called Refworks. There is a new Google Scholar Library. There is also the 'cheat' of citation machine. • How do you generate hypotheses? Enjoy this playful perspective by Mark Fonstad.
Jan 21-23	Due either Jan 23rd Cover letter (2%) - paper copy Resume or CV (2%) - paper copy Done in class: Rolling for Research (2%) - done	• Pilot research project • Rolling for Research - how to write a problem statement • Literature Reviews: what's the big deal? How to get started. •

	in class by hand	
Jan 28-30	Jan 28th Asking for a letter of recommendation (5%) - see instructions on how to turn this in Write a letter of recommendation, based on materials (2%) - done in class by hand	• You get to write a letter, using materials supplied to you by another student • Discuss the importance of looking at "models" of research projects (reviewing journal articles)- • Pilot research project • Problem statement for the individual research project: Reading about a Faulty Hypothesis • Senioritis: do I have it? how can I manipulate it (field work for outside junkies, something different, or give in to your addiction)
Feb 4-6	Feb 4th: Review a research journal article (3%) - oral presentation ... **key instructions gone over previous week**	• Q&A on individual problem statements for individual projects • Reference organization reminder: There is the free ASU-purchased program called Refworks. There is a new Google Scholar Library. There is also the 'cheat' of citation machine. • Data: where? how long to gather? • Pilot research project - brief discussion of status on presentations
Feb 11-13	Due Feb 11th Turn in problem statement for large research projects (2%) - a paper copy. You will follow the style of the "rolling for research" exercise and use discussions from the previous week	• Invited guest speaker: research project example • Going over graduate programs: http://www.aag.org/cs/publications/guide http://www.aag.org/galleries/publications-files/Program_Specialties.pdf • Brainstorm on research design for individual research projects • Q&A on problems encountered with pilot research projects due next week.
Feb 18-20	Pilot research project Oral Presentations (5%) Pilot Research Project turned in	• Self-evaluation of oral presentation

	(15%) - paper copy Bring to class your self-evaluation of the written paper (2%) Do in class your self-evaluation of the oral presentation (2%)	• Refworks!! it is not too late • Go over large research project and oral report • Go over what's due next, Literature Review
Feb 25-27	Literature Review for large research project (10%) . Be sure to turn in this self-evaluation with your literature review.	• Go over study site section for large research project • Data progress report next week
March 4-6	Progress report: turn in written paragraph that explains your progress in gathering data for your individual research project (2%)	• Go over how to do a written analysis of a research journal article • Go over what's due next, Study Site section: what would your GCU102 and GPH111 instructors say about how you think about the geography of your study site? • Writing in the Active Voice
3/11 and 3/13	Spring Break	
March 25-27	Study Site section draft for large research project (2%) Review a research journal article (3%) - written analysis ...	• Go over what's due next, Methods section: can someone else replicate what you did with your section? • How to prepare figures and figure captions • What's the difference, again, between results and discussion?
April 1-3	Methods section draft for large research project (2%) Early review of written large research project. Please turn in this self-evaluation at the top of your research project. Explanation: if you turn in your large research project early at this point, I will have the time to grade it and provide you feedback on what (if anything) you need to do to improve your paper.	Problem solving session
April 8-10		Problem solving session

		Discuss "unfreezing" yourself and How to write like a scientist.
Apr 15-17		Problem solving session
Apr 22-24	Student oral presentations (10%)	Student oral presentations
Apr 29	Student oral presentations (10%) Due May 1st: Large research project turned in hardcopy (35%). Please turn in this self-evaluation at the top of your research project.	Student oral presentations

How can I figure my grade?

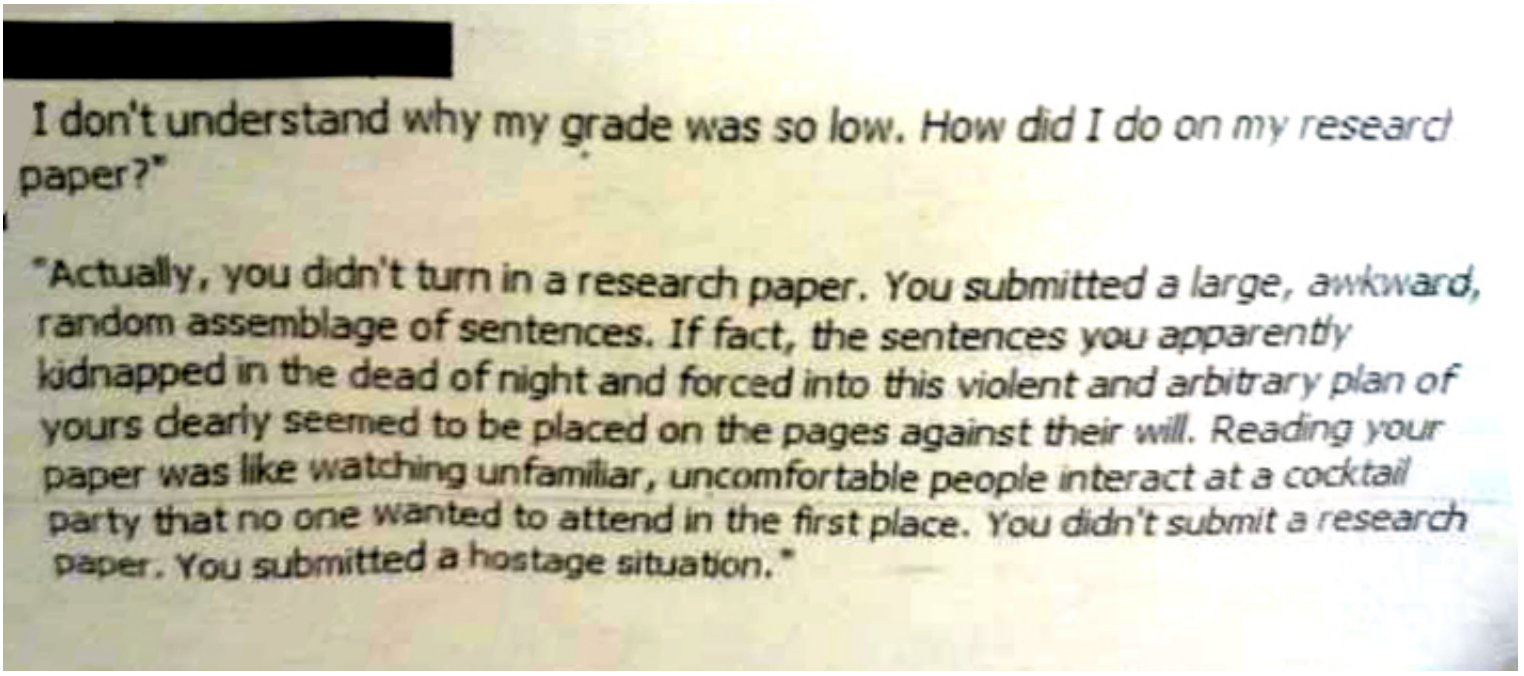
You can use this excel file to keep track of your grade. Just change the 4 to whatever grade you received.

A+ 100% and up
A 92-99.99%
A- 90-91.99%
B+ 88-89.99%
B 82-87.99%
B- 80-81.99%
C+ 76-79.99%
C 65-75.99%
D 50-64.99%
E < 50

Can I skip the busy work?

The little assignments in this class are organized to help every student complete this class with a good enough grade to graduate. The pilot project ideally gives each student a sense of the research process and timeline. Then, the little assignments for the large research project (LRP) are designed to be "plugged into" a larger paper.

Some students just want to "be done" and complete the LRP half way through the semester. If this fits your style, then you can turn in your large research project the Friday before Spring Break and get it graded early. All of the little assignments (literature review, problem statement, study site, methods) could all be wrapped into this one paper. So try this option. However, please avoid this hostage situation:



What do I need to buy for this class?

Nothing. There is no required textbook. All materials are hyperlinks.

How can I get help on assignments?

- Work Phone: 480-965-7533 (message)
  e-mail (best way to reach): ronald.dorn@asu.edu
- Office Hours: I have office hours after our class on Tuesday and Thursdays from 11:45 to 1pm. I'll go to my office with you, Coor 5580. Also, making an appointment is a great idea too.
- Background: Ron Dorn has been a Professor of Geography (now Geographical Sciences and Urban Planning) since 1988. He has been working with K-12 teachers since 1995 in his role as co-coordinator of the Arizona Geographic Alliance.

What are the other things in a syllabus required by CLAS, but that no graduating senior cares to read?

- **Professional Behavior** Your instructor expects that students will exhibit professional behavior inside the classroom and in working with other students outside of the class on assignments related to this class in addition to behavior in the classroom on ASU's campus.

- **Attendance**
  Attendance is required, unless a valid reason is provided to the instructor – such as a school function or a documented illness.

- **Late and Missing Assignments; Incompletes**

Late assignments will be graded on the same scale as assignments turned in on time, if the assignment is not more than 7 days late. However, late assignments pose a burden to the grading process. Someone turning in an assignment late should not expect that assignment to be graded in a timeline fashion. The instructor's first grading and feedback priority is to provide a response first to those students who do not turn in late assignments; basically – a late assignment is always put at the bottom of the grading pile. ***The instructor may lower the grade when a student turning in a late assignment if it is more than a week late.***

Missing assignments will be treated as a "zero" in the grading process.

Incompletes are only allowed for reasons presented in this Arizona Board of Regents Policy.

- **Academic Integrity/Plagiarism**

  The ASU Student Handbook contains the following information: "The highest standards of academic integrity are expected of all students. The failure of any student to meet these standards may result in suspension or expulsion from the university and/or other sanctions as specified in the academic integrity policies of the individual academic unit. Violations of academic integrity include, but are not limited to, cheating, fabrication, tampering, plagiarism, or facilitating such activities. The university and unit academic integrity policies are available from the Office of the Executive Vice President and Provost of the University and from the deans of the individual academic units."

  The rest of the code, which consists of several pages, is available at the following URL.

  http://provost.asu.edu/academicintegrity

- **Disability Accommodations for Students**

  Students who feel they may need a disability accommodation(s) in class must provide documentation from the Disability Resource Center (Downtown campus UCB 160, Polytechnic campus Sutton Hall 240, Tempe campus Matthews Center, or West campus UCB 130) to the class instructor verifying the need for an accommodation and the type of accommodation that is appropriate. Students who wish accommodations for a disability should contact DRC as early as possible (i.e. before the beginning of the semester) to assure appropriate accommodations can be provided. It is the student's responsibility to make the first contact with the DRC.

- **Religious Accommodations for Students**

  Students who need to be absent from class due to the observance of a religious holiday or participate in required religious functions must notify the faculty member in writing as far in advance of the holiday/obligation as possible. Students will need to identify the specific holiday or obligatory function to the faculty member. Students will not be penalized for missing class due to religious obligations/holiday observance. The student should contact the class instructor to make arrangements for making up tests/assignments within a reasonable time.

- **Military Personnel Statement**

  A student who is a member of the National Guard, Reserve, or other U.S. Armed Forces branch and is unable to complete classes because of military activation may request complete or partial administrative unrestricted withdrawals or incompletes depending on the timing of the activation. For

information, please see http://www.asu.edu/aad/manuals/usi/usi201-18.html.

- **Harassment Prohibited**
  ASU policy prohibits harassment on the basis of race, sex, gender identity, age, religion, national origin, disability, sexual orientation, Vietnam era veteran status and other protected veteran status. Violations of this policy may result in disciplinary action, including termination of employees or expulsion of students. Contact Student Life (Downtown campus 522 N. Central Ave., Post Office Room 247, 480-496-4111; Polytechnic campus Administration building suite 102, 480-727-1060; Tempe campus Student Services Building room 263, 480-965-6547; or the West campus UCB 301, 602-543-8152) if you feel another student is harassing you based on any of the factors above; contact EO/AA (480-965-5057) if you feel an ASU employee is harassing you based on any of the factors above.

- **Classroom etiquette:** In order to enhance productivity and ensure that everyone is treated with respect, the following standards for classroom decorum are expected.
  - Cell phone ringers turned off.
  - No side conversations, text messaging, note passing, etc.
  - Arriving on time and, if unavoidably late, making as inconspicuous an entry as possible.
  - If you disagree with remarks made by the instructor or fellow students, do so politely (we will do our utmost to operate on a non-partisan basis).
  - Keeping the instructor informed of reasons for absences or delays in submitting work.
  - Using laptops in class only for taking notes and looking up course-related material.

- **Grade Appeals**
  The professional responsibility for assigning grades is vested in the instructor of the course, and requires the careful application of professional judgment. A student wishing to appeal a grade must first meet with the instructor who assigned the grade to try to resolve the dispute. The process for grade appeals is set forth in the undergraduate and graduate catalogs, which are available at http://www.asu.edu/catalog

- **Electronic Communication**
  Acceptable use of university computers, internet and electronic communications can be found in the Student Code of Conduct (http://www.asu.edu/aad/manuals/usi/usi104-01.html) and in the University's Computer, Internet, and Electronic Communications Policy (http://www.asu.edu/aad/manuals/acd/acd125.html).

THERE IS NO TEXTBOOK FOR THE COURSE.

Instead, students are forced into a detailed reading of the refereed journal papers for their individual research project while they complete their literature reviews. The literature reviews involve students analyzing over 20 refereed journal articles related to their research.

Please just think about the work that you put into analyzing the professional literature when you write up your own papers and books. I believe that this process of reading and digesting to write up a literature review is substantive.

Students also read professional insight into the writing process such as the following. These materials exist as hyperlinks in the syllabus

How to write like a scientist:
http://alliance.la.asu.edu/gcu496/Spring2014/HowtoWriteLikeaScientist.pdf

The art of writing scientific papers and proposals
http://alliance.la.asu.edu/gcu496/Spring2014/Scientific%20Writing%20Cin_Tye%20Lee.pdf

Various humorous papers to make a more important point about issues in scientific writing, such as this "Tree in the Woods" paper:
http://alliance.la.asu.edu/gcu496/Spring2014/Treeinthewoods.pdf