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Teaching Note

Embedding Undergraduate Research in an Anthropology Curriculum

Abstract

We strive to provide our students with applied and transformational experiences to strengthen and crystallize the coursework within our disciplines and prepare students to conduct research in their later undergraduate years, graduate school, and careers. One of our greatest challenges as educators is training students to conduct research within the constraints of college and department-level requirements and subject to faculty teaching loads and the need for faculty buy-in. I have designed a system for embedding high-impact educational practices and transformational experiences in a stepwise process throughout an undergraduate anthropology curriculum. I support using community-based projects as the vehicle for training students to design and carry out collaborative research, after which they can mentor other students to further refine their training and/or take an upper-level course that results in a proposal for a capstone research project. Materials for four courses are included, along with assessment tools for measuring student mastery/growth/development. The courses involved are a research design seminar, a methods seminar, a research proposal course, and a seminar on mentoring research design or methods. Suggestions for adjusting faculty workloads are offered. My hope is to (1) provide educators with a ready-made program; (2) demonstrate its feasibility to faculty and its value to students, faculty, and community; and (3) encourage departments to use the tools presented or design their own using these as a template.

The value of undergraduate training in, and the conduct of, research has been reported by many educators, for many disciplines (Madan and Teitge 2013 for a review of particular disciplines; see also Russell et al. 2007; Kuh 2008; Lopatto 2010a; Craney et al. 2011). Benefits fall within the areas of personal and scholarly growth and career guidance. In terms of personal development, students report or demonstrate increased self-confidence, independence, creativity, discipline, cognitive development (e.g., analytical and synthetic skills), and feelings of accomplishment (Russell et al. 2007; Lopatto 2008, 2010b; Wayment and Dickson 2008).

Besides the obvious development of research skills (formulating research questions, conducting a literature review, designing a project and research methods, collecting and analyzing data, and reporting of results), students benefit scholastically in other direct and indirect ways. Applied and research experience help to crystallize what students learn in the foundational courses within their major, via "real-life" experience (https://www.utexas.edu/ugs/our/conduct/models). As Madan and Teitge (2013, 1) state, "…only after forming one's own hypotheses does one truly understand the nuances of research designs and better conceptualize course material." Students begin to think like scientists, and the more they participate in research design, the better they become at tailoring methods to answer proposed questions (Russell et al. 2007; Lopatto 2008; Madan and Teitge 2013).

At liberal arts and undergraduate colleges, faculty members often rely on undergraduates as research assistants. Student benefits from this may include training within their discipline, one-on-one mentorship (Madan and Teitje 2013), experience as peer mentors (Lopatto 2010b), knowledge of funding opportunities, conference attendance and presentations, and publications (Lopatto 2008). All of these experiences help solidify students' career paths, enhance their applications to graduate school, and/or facilitate their employment in applied areas (Lopatto 2008; Madan and Teitge 2013). Russell et al. (2007) found that participation in undergraduate research increased students' interest in attaining advanced degrees.

To expand research opportunities and benefits to a greater number of students, I have designed a program that embeds undergraduate research in an anthropology curriculum. A primary goal of the project is to enrich the lives, experiences, and education of students via applied, practical, and high-impact academic experiences. The value to educators is in the ready-to-use program. While there are countless references for the "what" and "why" of teaching and involvement of undergraduates in research, the "how" resources are scarce, and thus faculty are left to design their own courses and associated materials. Here I present materials for conducting and assessing four courses that involve early training for all majors in designing and conducting a collaborative research project, include peer mentoring for mid- to upper-level majors, and lead students toward a capstone research proposal.

Kuh (2008, 21) suggests that students should participate in at least two high-impact activities as undergraduates, to "enhance student engagement and increase student success." His list of possible activities are first-year seminars, common intellectual experiences, learning communities, writing intensive courses, collaborative assignments and projects, undergraduate research, diversity/global learning, service

learning/community-based learning, internships, and capstone courses and projects. My program hits on every one of his suggestions (except diversity/global learning, depending on the research topic chosen) and thus students would gain exponentially and synergistically from the courses included in this stepped program.

Research Topics

While educators with active labs can provide students with research opportunities in their own or related research, those without lab space and on-site research agendas can design projects that involve the community or community resources. Cooke and Thorme (2011), for example, provide ideas in "A Practical Handbook for Supporting Community-Based Research with Undergraduate Students." Benefits to the community may come in the form of information, social change, and/or public development (Paul 2006, 2012; Brown and Morrison 2009; Cooke and Thorme 2011). Partnerships can be fostered that benefit both parties. For example, SUNY Geneseo has a partnership with Letchworth State Park that involves student research and service in educational, ecological, and restoration projects. Finally, students are members of their school communities for eight months of the year and, in addition to learning research skills, they may make a positive contribution during the process.

Paul (2006) lauds the difference that her students make in the impoverished communities in which they collaboratively conduct research and describes the transformation those experiences can have on students. Aston et al. (2000) report that students who participated in service learning as undergraduates scored significantly higher (relative to a sample of students who did not) on the following variables: commitment to activism, promoting racial understanding, choice of a service career, and plans to participate in service after college (also see Eyler and Giles 1999 and Keen and Hall 2009). We, as educators, thus have the opportunity to foster generations of socially minded graduates who may be active in their future communities.

Possible research topics in community-based learning might explore:

- Community needs, practices, perceptions, or problems—for example, assessment of social programs and services, obesity/nutrition, practice of religion, and healthcare.
- Problems of poverty and access to resources—for example, food justice, urban problems, transportation systems, and education.
- Anthropogenic activities, environmental problems, or sustainability—for example, measuring use and perceptions of renewable energy or recycling programs on and off campus, attitudes toward and awareness of the risks of hydraulic fracking, brownfield and land revitalization, farming practices, run-off and other forms of pollution, and hunting.
- Culture, interests, problems, or practices of minority populations—involving for example Native Americans, migrant workers/families, Amish, and other ethnic or non-normative groups on and off campus.

Projects can be multidisciplinary and involve faculty and students from other departments, especially when specialized methods are involved. It is also recommended that faculty seek student opportunities via their office of sponsored research, campus or community volunteer centers, and community outreach programs. As a pool of potential research projects builds, it should lead to additional ideas and opportunities. Faculty members can thus provide for greater depth of student learning, expanded instructional delivery, community outreach, enhanced campus infrastructure, and teambuilding with other faculty, students, and community members.

Project Rationale

Anthropology faculty members at SUNY Geneseo have always encouraged students to make the most of their undergraduate experience, and we work with them through our curriculum and individually by offering directed studies, independent research, internships, field schools, study abroad, service learning, grant proposals, and presentations at national and international meetings. Indeed, we offer both domestic and/or international field schools every year.

While many of our students are interested in conducting research, they often do not know what they want to do and seldom know how to design and carry out a research project. When we agree to supervise an independent research project, it is above and beyond our teaching and research schedules, not to mention committee work. I am sure that faculty at many institutions are similarly overburdened, especially at smaller schools where there are fewer faculty at the departmental and college levels. The faculty work that goes into an independent student research project is daunting. We must guide students every step of the way. Therefore, a system in which students are collectively trained guarantees that they have a foundation in the research process before taking on an independent project. Instead of guiding one student through the process, we can train groups of students.

In a conversation on the topic of training students to do research, a faculty member argued that not all students

want to or are capable of conducting research. I would argue, though, that every class we teach involves research, theories, methods, etc. We require students to do literature review projects and read primary literature. We also embrace the teacher-scholar model, and students should be taught to understand how we do what we do. Typically only a chosen few students benefit from the one-on-one mentoring of a research project. We understand the value and importance of conducting research, however, and we can easily demonstrate the same to our students.

Anthropology is the study of humans, and since we are surrounded by people, there are potential research projects everywhere around us. Everything that we teach students with respect to human culture is represented in some form in surrounding communities. There are applied opportunities in areas both alike and different from students' personal experiences. I believe that every anthropology student develops an appreciation of people, in general, as well as of "the other." However, armchair appreciation is a long way from experiential respect and understanding. And community outreach, service learning, and civic engagement are ways to achieve the goals of (1) teaching students about anthropology, (2) training them to do research, and (3) teaching them to appreciate the other.

Overview of the Program

As mentioned, the program is designed to embed research training in a stepwise process. Each of the courses and course materials, along with key features and benefits, is described below. Assessment is designed to measure students' growth and competence from their own, their mentors', and faculty perspectives, depending on the course. It is important that we evaluate both student perceptions and performance, in order to assess learning outcomes, specifically to gauge (1) whether our mission and goals/objectives are being achieved, (2) how students perceive their growth and judge the utility of the process, and (3) whether the program can be improved to better achieve our academic goals. The following discussion lists strengths and benefits, course by course, of my approach to research training for undergraduates.

100-level Research Design Seminar (one credit hour)

(See Appendix A for syllabus and assessment tools.)

This course is planned as the first of two required workshops/seminars for first-year anthropology majors. It is expected that 12 to 15 students, divided into three to four working teams, will take the course and meet once or more per week (see syllabus, Appendix A.1.). Students are instructed on how to propose research questions, conduct a literature review, formulate hypotheses, and design a problem-oriented research protocol. The schedule of activities is as follows: (1) the instructor will propose various ideas to the students for community-based research projects and students will collectively choose one; (2) teams will begin to explore the topic in more depth and choose subtopics that individual members will research under the guidance of a reference librarian; (3) teams will formulate investigative questions and hypotheses, based on their research, and they will provide and receive advice/guidance from fellow students, mentors, and the instructor; (4) teams construct an overview of their project, and again go through the critiquing/revising process; (5) the instructor will provide a template for composing a formal introduction to a research paper; (6) teams will go through a multi-phase process to construct the introduction to the project, which will be formally presented to the class.

Assessment tools consist of surveys at beginning and end of the course, as well as a rubric for measuring individual student performance (see Appendix A.2., A.3., and A.4.). It is assumed that most entry-level students will have some knowledge of the various steps within the research design process, but minimal experience with the entire process. The beginning assessment will document or measure the students' prior experience and knowledge and the ending assessment will measure the attainment of skills, both actual and perceived, and be used to shape the course to improve students' acquisition and application of skills. Finally, an assessment of individual performance is designed to gauge the overall effectiveness of the course, for example in terms of the number of students who are highly, adequately, or approaching proficiency, and those who are not proficient.

Benefits of the course and training include the formation of a student cohort; students' scholarly and personal growth; and benefits to the faculty, department, and community. Since all new majors are required to take the course, students will get to know and learn to depend on one another while working in and outside of class, thus expanding their social network within their chosen discipline. They will work together toward a common goal, learning from and benefitting from one another's strengths. The collective nature of the course means that young and inexperienced students will not struggle alone; they can depend on fellow students, mentors, and the instructor. Often, students do not have the opportunity to participate in a seminar situation, where camaraderie and synergistic discussion abound, until late in their undergraduate careers.

In addition to active research training, students gain scholarly skills such as library literacy and literature-review training under a professional reference librarian; critical-thinking skills via their literature training and review; the ability to critique other students' work and to revise their own work via feedback; training in professional writing and revision; and preparation for advanced research and graduate work.

In terms of personal growth, students should (at a minimum) improve their organizational and time-management skills and benefit from team collaboration and the fulfillment that comes from a new skill and job well done. As noted above, research has shown that students report and demonstrate increased self-confidence, independence, creativity, discipline, and cognitive development when engaged in undergraduate research. Finally, students will be less able and inclined to fall behind or fail to participate without penalty, because mentors will work with teams outside of the classroom. Students' participation, contributions, and work in a congenial and supportive setting, while adhering to an enforced schedule, positively reinforce the importance of time management and resulting academic success. This is especially important in their early years, when students may become frustrated and begin the downhill trajectory that results in academic probation and possibly expulsion.

The department and faculty benefit by having better-prepared and accomplished students. Faculty should be more willing to take on students' research projects when they know that students have received preliminary training. Students can then go on to greater achievements such as research grants, presentations, joint or individual publications, awards, etc.

Finally, the community may benefit in a variety of ways, as discussed in the "Research Topics" section.

200-level Methods Seminar (one credit hour)

(See Appendix B for syllabus and assessment tools.)

The course is the second of the two required workshop/seminars for new majors. It is designed to train students in methods design, data analyses, and reporting of results in order to answer their proposed research questions (see syllabus, Appendix B.1.). The same cohort and teams of students will meet once or more per week, either in or outside of the classroom, to continue work on the projects they began in the Research Design Seminar course. The schedule of activities is as follows: (1) review of team projects and individual student assignments; (2) instruction and guidance on choosing and assigning variables and data collection methods, along with critiquing and subsequent revision; (3) three weeks of data collection under a mentor's guidance; (4) instruction and performance of descriptive and analytical statistics and reporting of results, under the guidance of mentors, followed by critique and revision; (5) instruction on writing the "methods and results" sections of a research paper; (6) students individually compose their own methods and results sections and collectively incorporate them into their teams' methods and results sections, followed by critique and revision; and (7) teams present their projects to the class.

Assessment tools again consist of a rubric to gauge individual student performance (see Appendix B.2.), as well as a rubric for mentors to gauge student growth over the course of the semester (see Appendix B.3.).

The cohort model will continue to strengthen student relationships and collaboration, as long as problems are dealt with as they arise. For example, if individuals within teams did not get along or students did not pass the Research Design Seminar, team memberships will have to be adjusted.

Students are expected to develop strong analytical skills via: (1) determining what data are necessary for testing hypotheses and answering questions; (2) selecting data-collection methods; (3) using variable coding and entering data into a spreadsheet; (4) determining statistical tests to be performed; and (5) conducting data analyses and reporting. They will continue to hone their critical thinking and collaborative skills. The applied nature of the course will help students to think like scientists, in that they will come to understand how knowledge is produced.

Students are expected to grow personally, in terms of problem-solving capabilities and many of the same characteristics discussed in relation to the Research Design Seminar, including increased self-confidence and the feeling of being engaged in fulfilling activities. Depending on the topics chosen for research, students may accrue the benefits of service learning. Helping people and the satisfaction therein, taking an active role in improving quality of life, access to information, or advocacy are important life lessons. Those experiences have been shown to increase students' community involvement and service, activism, and racial understanding. (see "Research Topics" section for references).

Students, faculty, and the department will benefit in that all students will, to varying degrees, have learned the basics of researching, proposing, and carrying out a research project. Students can then go on to propose a more advanced version of the project or another of their choosing. Even if they never conduct a full-fledged, data-driven project, they will understand how research is conducted and advances in knowledge are made.

Along with bridging the campus and community, the local community may benefit from education via materials provided and/or the data that are generated and disseminated, as well as assistance with action to resolve local problems and learning strategies for advocacy.

300-level Research Proposal Course (one credit hour)

(See Appendix C for syllabus.)

This course is meant for students who want to do an independent research project with a particular faculty member. The course instructor will guide students collectively and individually through the process of developing a research proposal, building on what they learned in the required previous seminars and if they mentored one or both of those courses. The same format is used, that is, class instruction, independent literature research (with the aid of reference librarians) and writing, and collective critiquing and revision. The course will culminate with the development of grant (if necessary and available) and research proposals that will be submitted to appropriate faculty members for directed research or capstone studies.

Many of the benefits of this venture overlap, of course, with the required seminars, in that students are once again going through the process of designing a research project. Students will refine their skills, increase their knowledge within their chosen topic or subdiscipline, and should become more confident in their ability to conduct research. In my experience, many students believe that an independent research project is beyond their abilities and that they will be trained in graduate school on how to conduct one. And while graduate school does train students to do research, many flounder.

In our process during the introductory seminars, students will be accomplishing individual goals and likely garnering valuable accolades. While the group projects that result from the two seminars are suitable for undergraduate presentation venues, especially on-campus undergraduate research days, in-depth research projects in a student's area of interest require more far-reaching efforts. But if they persist, the results may be suitable for presentations at national meetings and/or individual or joint publications with their faculty supervisor. The experience allows students to test their interest and suitability for graduate school and careers and better prepares them for admission to and success in graduate school. By graduation, a student's CV could potentially include the completion of a research proposal and grant application, receipt of a grant, independent research, presentation at meetings, and publication.

Faculty should be more willing to supervise a directed study if the student is armed with a research proposal. We always benefit from our students' accomplishments (and possible additional presentations and publications), in the tenure and discretionary reward process and in the fulfillment of our commitment to education and student advancement.

300-level Mentoring Research Design or Methods course (one credit hour)

(See Appendix D for syllabus.)

As mentioned in the descriptions of the seminars on research design and methods, student mentors are suggested for those courses. Mentors are expected to aid in student learning/training/assignments and to relieve instructors' workloads, especially since I designed the courses as extra-duty, so that faculty can buy out one of their regular course assignments after earning three credit hours of work (see "Faculty Buy-in and Rewards" section below). Mid- to upper-level students may serve as mentors and facilitators for research design, data collection and analyses, help in course/student assessment, guiding students with writing and revisions, and so forth.

As in the 300-level Research Proposal course, students in this course will continue to refine their research skills. Those who go on to do independent research will have a pool of ideas, strategies, and skills to draw on, based on having performed and assisted students in multiple projects. In my experience, teaching assistants/mentors derive fulfillment from acting as role models, while gaining skills in advising and instruction. I believe that one of the most important outcomes of the experience is the deeper understanding and retention of the material that results from the second time around. Statistical skills weaken rapidly without continued use. Thus mentoring students in the Methods Seminar, prior to conducting their own research, will serve to establish a strong foundation in the many and varied statistical applications and tools that may be required. Mentors also help incoming majors adjust and become more active in the department.

Faculty benefit, as noted, since mentors increase the number of individuals that faculty members can accommodate and increase the number of people that students can turn to for help. They keep the students on track by continuous monitoring of their work, so that students' grades do not suffer and their time-management skills improve. Finally, continued collaboration and teamwork benefits everyone concerned, in terms of collegiality, interdependence, and a support network.

Faculty Buy-in and Rewards

There are costs and benefits to the program. Many of the benefits to faculty have been previously discussed. In large research universities, course loads may often be no more than two courses per semester, general academic advisement is handled by specialized staff, and faculty have graduate students to help with research and teaching. In contrast, we at smaller universities have to add research, publications, advisement, and committee work to teaching three or four courses per semester. It is easy to understand why some

faculty members avoid adding responsibilities for directed research projects and supervision of honors' students.

If faculty course rotations can be altered so that faculty members are rewarded with a course buy-out, they may be more likely to put in the extra time to train students to conduct research. My program requires faculty to carry one or more extra credits in any semester, by teaching one or more seminars and/or directed studies. Colleges and universities expect that faculty will supervise occasional directed studies anyway. Those extra hours will carry over into subsequent semesters, in the form of a course buy-out. In that way, faculty members' campus obligations will be periodically reduced so that they can devote more time to their research and publication. Adjuncts can be hired for general/service courses where feasible or upper-level specialty courses can be skipped every few years.

Department chairs can also adjust commitments to departmental and college committees during semesters when faculty members are fulfilling extra course hours. The best way to obtain more involvement from faculty is to fairly distribute the hours they spend in campus-oriented activities. Many faculty members do little or no one-on-one work with undergraduates, and they are not penalized. Over the long term, it is neither reasonable nor sustainable to expect faculty members to take on more responsibility, without making the work manageable and compensating them for it.

It is my hope that the information provided in this article and the appendices will be useful to faculty in a variety of disciplines and institutions. I encourage faculty and department chairs to use whatever portions of the program are useful and change them to suit their needs. I believe that faculty will push themselves a bit in one or more semesters if the pay-off is a course buyout every few years. With the help of mentors and students taking the courses, an instructor's job becomes easier. Instead of having students submit assignments that require correction and feedback, those tasks are shared among the participants. Students learn from one another, while being guided by student mentors and the instructor.

After completion of all four courses in the series, students should be better prepared to do research than many entry-level master's students. While faculty members earn credit toward a course buy-out, the process of overseeing research becomes much less time-consuming and much more rewarding. Joint presentations and articles can result, giving students a head start in their careers and adding to faculty members' contributions to their discipline.

I realize this system is contingent upon having the faculty resources to cover required courses. However, I encourage chairs to consider the benefits to faculty and students, especially if multiple faculty members are willing to participate over time. What could be better than sitting with a group of majors while helping one another design and build something? Faculty often begin their careers at a university by teaching mandatory and other courses related to their area of expertise. However, I am not sure why they are often still teaching the same courses decades later. Not all courses remain necessary and relevant to programs and department/college missions. Periodic review and faculty input can update curricula and faculty members' outlook and increase productivity to advance important institutional goals.

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Appendix A

Research Design Seminar Course Materials

1. SYLLABUS

COURSE DESCRIPTION: This course is the first of two seminars in the Anthropology department's mandatory research training for beginning majors. The course will train students to design a research project. Students will collectively design a community-based project. After the initial introduction of the research topic, students will (1) conduct a literature/internet review, (2) formulate research questions and hypotheses, and (3) write the introduction to a research paper. The course serves as the pre-requisite for METHODS SEMINAR.

COURSE OBJECTIVES: Students will:

1. Demonstrate their understanding and mastery of the hypothetico-deductive method via in-class discussion and assignments.
2. Learn to conduct an informed literature review via training by a reference librarian. Students will demonstrate their competence via submission of relevant resources for their portion of the project and their use of those resources for formulating research questions and hypotheses.
3. Work together and collectively learn how to organize/synthesize relevant information and use it to construct the framework of and written introduction to the research project.
4. Be evaluated on the degree to which they have grasped the research process, the quality of their assignments and contributions, and their level of involvement both in and out of class.

COURSE REQUIREMENTS:

1. Assignments 90pt
2. Classroom participation 10pt

SCHEDULE:

WEEK 1	Course Introduction and "beginning" assessment exercise	
WEEK 2	Introduction to research topic **ASSIGNMENT:** Conduct an internet search on the research topic and upload 5 subtopics and/or research questions	5pt
WEEK 3	Discussion and choice of subtopics, i.e. subsections of the research topic that individual groups will explore, and group formation (~3 groups of 4) **ASSIGNMENT:** Meet outside of class and discuss the overall topic, your group's portion of the project, and determine what individual group members' tasks will be, in terms of literature review.	
WEEK 4	Constructing an outline **ASSIGNMENT:** Meet outside of class and continue working on your group project. Collectively construct and upload an outline of what your literature/internet search will focus on. There should be a minimum of 4 sections, corresponding to individual members' tasks	
WEEK 5	Library Training – Introduction to relevant search strategies **ASSIGNMENT:** Begin your individual research and expand on your section of the outline, incorporating notes (must be in outline format) and 5 supporting/relevant references, and upload	10pt
WEEK 6	Library Training – Assessment of student research **ASSIGNMENT:** Correct any weaknesses of your outline style, references, or search strategies, based on feedback/critiques from librarian and upload	5pt
WEEK 7	Groups will provide an overview of their group project and what individual members will be doing **ASSIGNMENT:** Continue with your individual research and expand on your section of the group's outline and upload. You must include a minimum of 3 subtopics within your section.	10pt

	Formulating hypotheses for your group and individual research	
WEEK 8	**ASSIGNMENT:** Meet as a group and draft hypotheses and investigative question(s) and upload them in the appropriate sections of the group outline. (5pt) Review other groups' contributions and upload comments for discussion. (5pt)	10pt
WEEK 9&10	Discussion and critique of outlines/ hypotheses **ASSIGNMENT:** Continue to refine your outline section, based on group/instructor feedback, and upload a new version each week. The second one will be your final outline and must include 10 relevant references and two hypotheses/questions (10pt per week)	20pt
	Writing an introduction	
WEEK 11	**ASSIGNMENT:** Meet as a group and draft and upload the framework of the Introduction, based on each member's research (5pt). Review other groups'drafts and upload comments for discussion (5pt)	10pt
WEEK 12	Discussion and critique of Introduction drafts **ASSIGNMENT:** Write and upload your portion of your group's Introduction section to a formal research paper. (5pt) Review other members' sections and prepare comments for discussion (5pt)	10pt
WEEK 13	Within-group discussion and critique of Introduction sections Revise and upload your section of the Introduction, based on feedback from your in-class group discussion.	5pt
WEEK 14	In and out of class, collectively piece the Introduction together and upload.	5pt
WEEK 15	In-class reading of and commenting on groups' Introductions	
WEEK 16	End assessment	

2. BEGINNING ASSESSMENT EXERCISE

1. Rate your knowledge of how to design a research project:

a=1 (poor)

b=2 (fair)

c=3 (good)

d=4 (excellent)

2. Have you ever been taught how to design a research project?

a. Yes

b. No

Please give details:

3. In your opinion, have you ever been expected to conduct research without being adequately trained?

a. Yes

b. No

Please give details:

4. Have you ever designed a formal research project vs. a literature review?

a. Yes

b. No

Please give details:

5. Are you interested in the course content this semester?

a. Yes

b. No

6. Do you think that the course will be beneficial to you during your undergraduate career?

a. Yes

b. No

How so?

7. Do you plan to do an independent research project as an anthropology major?

a. Yes

b. No

8. Do you think that the course will be beneficial to you in your possible future career?

a. Yes

b. No

How so?

9. What do you believe the steps to conducting research are?

10. Think of a topic of interest and in outline/bulleted form, tell what specific (i.e. relevant to your topic) things you would do.

3. END ASSESSMENT EXERCISE

1. Rate your knowledge of how to design a research project:

a=1 (poor)

b=2 (fair)

c=3 (good)

d=4 (excellent)

2. Knowing what you now know, how should you have answered the previous question on the first day of class? If you don't remember, ask instructor for your previous answer.

a=1 (poor)

b=2 (fair)

c=3 (good)

d=4 (excellent)

3. Do you now feel that you could design a research project?

a. Yes

b. No

4. Do you feel that the course has adequately prepared you for conducting research?

a. Yes

b. No

5. Are you looking forward to the Research Methods Seminar?

a. Yes

b. No

Why?

6. Did you find the course to be of value to you?

a. Yes

b. No

7. Using the topic you proposed on the first day of class, list specific steps for producing a research proposal (in outline/bulleted form).

8. How are research papers organized, i.e. what are the sections in a professional journal article?

4. INDIVIDUAL STUDENT ASSESSMENT RUBRIC

CAN ALSO BE USED FOR CAPSTONE PROPOSAL SEMINAR AND INDEPENDENT RESEARCH PROJECTS

For each of the following:

1. Conducted appropriate literature review, in terms of number and relevance of materials and their use
2. Formulated appropriate questions/hypotheses to answer research question
3. Constructed professional journal style Introduction section

Rubric:

1=A=highly proficient

2=B=adequately proficient

3=C=approaching proficiency

4=D/E=not proficient

Appendix B

Methods Seminar Course Materials

1. SYLLABUS

COURSE DESCRIPTION:

This course is the second seminar in the Anthropology department's mandatory research training for beginning majors. It will train/prepare students to design the methods and analytical protocol for a research project/paper. Students will use what they learned and continue with the research project that was begun in the RESEARCH SEMINAR course. The course consists of (1) training in data collection and statistical analyses, (2) data collection and entry, (3) statistical analyses of data, (4) writing the methods and results sections of a formal research paper, and (5) project presentations. The course is required for all majors and it serves as the pre-requisite for MENTORING RESEARCH DESIGN/ METHODS SEMINAR and RESEARCH PROPOSAL SEMINAR. Prerequisite: RESEARCH DESIGN SEMINAR

COURSE OBJECTIVES: Students will (both as a group and individually):

1. Demonstrate their understanding and mastery of the hypothetico-deductive method via in-class discussion and assignments
2. Design appropriate data collection and analytical methods for answering research questions begun in the RESEARCH SEMINAR course, under the guidance of the instructor and student mentors
3. Collect sufficient data for testing their individual hypotheses/questions under the guidance of student mentors
4. Demonstrate their ability to use SPSS and conduct statistical analyses to test hypotheses and answer research questions
5. Demonstrate, at a basic level, their ability to write and report on the methods and results of a research project
6. Be evaluated on the degree to which they have grasped the research process, the quality of their assignments and contributions, and their level of involvement both in and out of class.

COURSE REQUIREMENTS:

1. Assignments 95pt
2. Presentation 5pt

SCHEDULE:

WEEK 1	Course Introduction	
WEEK 2	Group formation and topic assignments **ASSIGNMENT:** Meet as a group and (1) review all information from RESEARCH DESIGN SEMINAR that is relevant to your topic, (2) assign what hypotheses individual members will work on, and (3) determine target population	
WEEK 3	Data collection methods **ASSIGNMENT:** (1) design and upload methods to answer your research question(s) and/or test your hypotheses (e.g. sample questionnaire, check sheets, interview questions, etc.) (5pt) and (2) review other group members' work and upload your comments (5pt)	10pt
WEEK 4	Review/critique methods **ASSIGNMENT:** Revise methods based on feedback and upload final version	5pt
WEEK 5-8	Data collection and entry, under mentor guidance	20pt
WEEK 9	Descriptive statistics **ASSIGNMENT:** Under a mentor's guidance, collectively (1) run descriptive statistics, (2) construct charts/tables to illustrate results, and (3) upload your work. (5pt) Individually review other groups' work and upload your comments. (5pt)	10pt
WEEK 10	Analytical statistics **ASSIGNMENT:** Under a mentor's guidance, collectively (1) run analytical statistics, (2) construct charts/tables to illustrate results, and (3) upload your work. (5pt) Individually review other groups' work and upload your comments. (5pt)	10pt

WEEK 11	Review/critique of analyses **ASSIGNMENT:** Revise analyses/ charts/tables based on student/ mentor/faculty feedback and upload final version	5pt
WEEK 12	Writing a methods section **ASSIGNMENT:** Under a mentor's guidance, individually and collectively write methods section and upload your work. (5pt) Review other group members' work and upload your comments. (5pt)	10pt
WEEK 13	Writing a results section **ASSIGNMENT:** Under a mentor's guidance, individually and collectively write results section and upload your work. (5pt) Review other group members' work and upload your comments. (5pt)	10pt
WEEK 14	Review/critique methods and results **ASSIGNMENT:** Revise and upload final version of methods and results	5pt
WEEK 15	Preparing a PowerPoint presentation of scientific research **ASSIGNMENT:** Individually and collectively create a PowerPoint presentation of your group project and assign individual presentation parts. Rehearse your portion.	10pt
WEEK 16	Presentations	5pt

2. INDIVIDUAL STUDENT ASSESSMENT RUBRIC FOR INSTRUCTOR USE

CAN ALSO BE USED FOR RESEARCH PROPOSAL COURSE AND INDEPENDENT RESEARCH PROJECTS

For each of the following:

1. Design and use of appropriate methods to answer research questions and/or support/refute hypotheses
2. Construction of professional journal style Methods section
3. Use of appropriate analytical techniques
4. Satisfactory interpretation of results
5. Construction of professional journal style Results section

Rubric:

1=A=highly proficient

2=B=adequately proficient

3=C=approaching proficiency

4=D/E=not proficient

3. INDIVIDUAL STUDENT ASSESSMENT RUBRIC FOR STUDENT MENTOR USE

RATED 1-5

1=no knowledge

2=poor command

3=fair command

4=good command

5=excellent command

BEGINNING AND ENDING SCORES FOR:

Methods design

Data collection

Data entry

Descriptive statistics

Analytical statistics

Written methods section

Written results section

Appendix C

Research Proposal Course Materials

1. SYLLABUS

COURSE DESCRIPTION:

This course is required for all students intending to do independent research under the supervision of a faculty member. The faculty member of choice will have agreed to supervise the project contingent upon the successful production of a research proposal at the end of this course. Students will be guided through all steps of the research proposal protocol and the final version may serve as an Undergraduate Research Grant proposal. The course serves as one of Anthropology's capstone options for majors.

COURSE OBJECTIVES:

Students will demonstrate their knowledge and training and will be evaluated and graded on their performance/skill in the completion of the following course requirements:

1. Propose a research question
2. Conduct a literature review
3. Formulate hypotheses
4. Design methods
5. Write the abstract, introduction, and methods sections of the research proposal

COURSE REQUIREMENTS:

1. Assignments: 95%
2. In-class Participation: 5%

NOTE: When no class is scheduled, instructor is available during regular class time

SCHEDULE:		
WEEK 1	In-class: Introduction to course **ASSIGNMENT:** Upload a description of your research project, review other students' project descriptions, and upload comments	5pt
WEEK 2	In-class: Discussion of projects and instruction on construction of an outline to be used during your literature review **ASSIGNMENT:** Make an appointment and meet with a reference librarian for help with your literature review and begin your literature review	5pt
WEEK 3-7	**ASSIGNMENT:** Spend 3 hr/week conducting your literature review and working relevant material into your outline. You will add a minimum of 5 new references per week. By Friday of each week you must upload your revised outline and bibliography. Instructor is available during class time for assistance.	25pt
WEEK 8	In-class: Discussion of your hypotheses **ASSIGNMENT:** Upload your hypotheses	5pt
WEEK 9	**ASSIGNMENT:** Write the first draft of your introduction and upload. Review other students' introductions and upload comments.	10pt
WEEK 10	In-class: Discussion/critique of introductions **ASSIGNMENT:** Revise your introduction, utilizing classmates' and instructor's feedback, and upload.	5pt
WEEK 11	**ASSIGNMENT:** Revise and upload the final version of your introduction. Draft and upload the methods you will use. Review classmates' methods and upload comments.	10pt
WEEK 12	In-class: Discussion/critique of methods **ASSIGNMENT:** Revise/refine methods and upload	5pt
WEEK 13	In-class: Writing methods section **ASSIGNMENT:** Write methods section, upload, and review other students' methods and upload comments	10pt
WEEK 14	In-class: Discussion/critique of methods **ASSIGNMENT:** Revise your methods section, utilizing classmates' and instructor's feedback, and upload.	5pt
WEEK 15	In-class: Writing an abstract **ASSIGNMENT:** Write abstract, upload, and review other students' abstracts and upload comments.	5pt
WEEK 16	In-class: Discussion/critique of abstracts and course **ASSIGNMENT:** Revise abstract based upon instructor feedback and meet with the faculty member who will oversee your project. Ask them to send their approval and comments to you and course instructor before grades are due.	5pt

Appendix D

Mentoring Research Design or Methods Course Materials

1. SYLLABUS

COURSE DESCRIPTION:

This course provides advanced experience in research design or methods and analyses. It is designed for mid- to upper-level students who will act as mentors for students in the RESEARCH DESIGN or METHODS SEMINAR. Mentors will assist students with their group and individual projects, both in and out of class, requiring ~50hr of investment. They will hone their research skills via involvement in multiple projects requiring different methodological and analytical techniques. The course serves as a capstone option for majors. Students anticipating independent research are encouraged to take this course.

COURSE OBJECTIVES:

Mentors will:

1. Demonstrate their knowledge of research design, methods, data collection and entry, analytical methods, and reporting of methods and results by the quality and efficiency of production of student assignments and submissions;
2. Demonstrate their commitment to the departmental research initiative, instructor, and students, by their (a) conduct, (b) classroom attendance, (c) coordination of and assistance during group and individual meetings, and (d) accomplishment of assigned tasks;
3. Gain experience in the assessment process by evaluation of student progress over time.

COURSE REQUIREMENTS:

1. Student mentoring as evidenced by quality of student assignments 75%
2. Assessment of student progress 25%