

# UNLV Social Science Methods Certificate (SSMC)\*

## I. General Information

Certificate Program Title:	Social Science Methods Certificate Program (SSMC)
College/Division/Unit:	College of Liberal Arts
Department/School:	N/A
Contact Person:	Jennifer Keene
Campus Phone:	702.895.4097
Mail Stop:	5001
E-mail Address:	jennifer.keene@unlv.edu
Certificate Type:	Graduate

## II. Required Additional Documents

Attached documents include the Certificate Financial Aid Reporting Form and a letter of support from Dean Chris Hudgins of the College of Liberal Arts.

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### III. Executive Summary

*Research methods are, arguably, one of the subjects most amenable to interdisciplinary instruction* (Aldrich 2014, 152).

What follows is a proposal for a social science methods certificate at UNLV (hereinafter the “Certificate Program”). This Certificate Program will be supported by the a core group of faculty affiliated with the Social Science Methods Consortium (hereinafter the “Consortium Faculty”). The Certificate Program will be open to current graduate students who will require the use of social science methods in the original research produced as part of their degree program. The motivation behind the creation of this Certificate Program is the increasingly interdisciplinary nature of social science research. As our students begin to pursue research questions that cross the boundaries of traditional academic silos, the methods training we offer within those silos becomes inadequate to the task of preparing our students for the realities of research. Additionally, our disciplinary approaches to empirical research overlap in important ways, but each discipline retains unique strengths in particular research tools. By creating an interdisciplinary social science research methods Certificate Program, we can avoid the duplication of research methods course offerings and expand the breadth of methodological training available to students across social science disciplines.

### IV. Relationship to Existing Programs

The interdisciplinary approach to social science methods training has been a staple in political science departments for decades (Aldrich 2014). A particularly promising approach has been the development of interdisciplinary methods certificates. The more successful of these programs make use of the existing substantive expertise of the home department, but utilize the interdisciplinary methods certificate to “extend and enhance the methodological offerings” of the home department (Glasgow 2008, 10). A recent analysis of interdisciplinary endeavors in higher education found that “methodology initiatives in cross-university programs” work particularly well (Aldrich 2014, 131).

Most of UNLV’s social science departments are located in the College of Liberal Arts (COLA). Among these are Anthropology, Political Science, Sociology, and Psychology. As such, the Certificate Program will be located in COLA. Mindful of the need to foster truly interdisciplinary methods training, participation in the Certificate Program will be open to all qualified students using social science methods, regardless the location of their department or unit.

UNLV’s social science departments already have a tradition of methodological rigor in their graduate programs. A summary of the research methods requirements in a number of relevant departments can be found in Appendix A. This certificate would allow interested students to build upon this tradition, preparing them to generate cutting edge research in their chosen fields. It would focus upon giving students the opportunity to achieve mastery in the research tools and methodologies that will be crucial to their chosen research area.<sup>1</sup> As it stands, many of the necessary resources exist on the UNLV campus, but they are not currently accessible to students across social science disciplines.

#### IV.a. Existing Certificate Programs

The Graduate College already has a program called the Graduate College Research Certificate Program (GCRCP). This program *sounds* similar to the Certificate Program proposed here, but it is not. The GCRCP requires graduate students to complete six modules from a series of workshops offered by the graduate school. These workshops focus on ethics, data management, professionalization, and the like. These workshops are eminently useful. However, the GCRCP does not provide full-length courses for credit, and its focus is not on achieving mastery in specific research methodologies. For this reason, the existence of the GCRCP does not mitigate the need for the kind of Certificate Program proposed here. The Certificate Program may work in tandem with, but not replace, the existing GCRCP.

The Psychology Department has very recently unveiled the Graduate Certificate in Quantitative Psychology (GCQP). The approval memo for this program is included in Appendix B for reference. The GCQP is clear evidence of the demand for methods certification among our social science graduate students. This certificate is housed in the Psychology Department, and requires at least six of the twelve required credits to be taken within the home department. Indeed, the GCQP is compatible with the Certificate Program proposed here; students seeking the GCQP Certificate could *also* pursue the certificate from this Certificate Program, since many of the requirements will overlap. Courses counted for the GCQP would also count toward the requirements of this Certificate Program’s requirements.

However, the Certificate Program differs from the GCQP in three important ways. First, the methodological scope of the GCQP is somewhat narrower than that of the Certificate Program proposed here. The GCQP is clearly focused only on quantitative approaches, although the APA defines “quantitative psychology” somewhat broadly. The Certificate Program, however, seeks to encompass the full range of empirical social science methods.

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<sup>1</sup>Here, we take a wide and inclusive view of what these tools and methodologies are likely to be. In addition to the typical core methods courses, this might include things like advanced statistics training, computer programming for practical research, human or machine-assisted content analysis methods, etc.

Second, the GCQP is not overtly interdisciplinary in its design; students must take at least half of their methods courses in the home discipline, but there is no requirement than *any* courses be taken outside the Psychology department. This is important, of course, because the GCQP does not create any formal avenues by which Psychology students could be granted access to courses in other disciplines. Third, the target population for the GCQP is Psychology students. Although the GCQP memorandum does not explicitly limit the program to Psychology students (see Appendix B), the courses required for completion of the certificate are open only to admitted Ph.D. Psychology students (see Appendix A). By contrast, the Certificate Program is open to graduate students across departments and units, provided they meet the requirements specified in this proposal.

#### **IV.b. Providing Knowledge and Skills**

Our current *ad hoc* way of dealing with social science methods training simply is not working. The current approach requires departments to provide all methods training in house. This limits the depth of training available to students in each department, since most departments do not have the resources to cover all of the methods training their students require. In addition, this results in a good deal of duplicated effort across departments. Our graduate students have expressed a keen interest in taking courses in other departments (See Table 3 in Appendix E). When our students do try to take courses in other departments, they are met with a dizzying array of course prerequisites. Faculty members are understandably wary of admitting graduate students from other departments into their advanced methods courses.

A Certificate Program represents a middle road. It allows for truly interdisciplinary training in methods, while preserving departmental autonomy and substantive focus. This is in keeping with our students' strong focus on interdisciplinary social science research (See Table 3 in Appendix E). But the Certificate Program proposed here is a more conservative approach than the Integrative Graduate Education and Research Traineeship (IGERT) movement, through which the National Science Foundation sponsors the complete reorganization of social science infrastructure on campus (Aldrich 2014). The Certificate Program approach preserves the primacy of the student's home department, where standalone interdisciplinary or "general" social science degrees would by definition uproot students from their mooring in their chosen discipline.

The Certificate Program has a number of key goals. Among them are:

- providing a broad, interdisciplinary understanding of social science research methods;
- tailoring research methods training to individual student needs;
- credentialing students who have achieved mastery in social science research methods;

- encouraging interdisciplinary approaches to the substantive research questions in the existing disciplines;
- develop a reputation for producing scholars who excel in the innovative use of the most relevant and cutting-edge research methods; and
- create a culture of interdisciplinary conversation among UNLV’s faculty with the aim of developing formal (or informal) centers for research methods support for faculty.

## V. Student Profile and Demand

A number of prestigious institutions have recognized the need for a program like this. Appendix D provides a summary of eight such programs. Duke University’s PARISS certificate provides Duke’s social science Ph.D. students “an interdisciplinary context in which to develop and apply their methodological skills”(Duke University N.d.). Likewise, Stanford University’s MAPSS certificate recognizes the desire of students to have “a certification to accompany [their] degree[s], confirming that [they] have special expertise in social science research methodology” (Stanford University N.d.). Cambridge University has a Centre dedicated to advanced methods training that serves as “a shared platform for providing research students with a broad range of quantitative and qualitative research methods skills... that are relevant across the social sciences”(University of Cambridge N.d.).

Of the similar certificate programs in existence at other institutions, most require that students be actively pursuing a graduate degree at the home institution in order to participate (See Appendix D). Stanford’s MAPSS program caters to Ph.D. students who are already enrolled in a program for which social science research methodology is an important part of the research program (Stanford University N.d.). Duke’s PARISS program has a bifurcated student profile; fellows in the program must be advanced Ph.D. students, while assistants are graduate students at any stage of progress toward their terminal degree (Duke University N.d.).

The Certificate Program proposed here will be open to students who have been admitted to graduate programs and who are pursuing masters degrees or doctorates. These students will come from any number of disciplines for which social science methods might be an appropriate tool of inquiry. The Certificate Program will not be recruiting professionals or those interested only in an applied social science methods certification. As such, our students will likely be graduate students who are planning either to enter the academy in their chosen disciplines or to obtain employment as professional researchers. These students will be those with the strongest interest in developing strong and marketable methodological skills. The applicants must also have successfully completed a relevant social science methods course; as

such, these students will generally be in their second semester or beyond of graduate studies.

## **VI. Current Unit Offerings & Resources**

The College of Liberal Arts is a natural home for the Certificate Program, given the high concentration of social science departments in the College. The College of Liberal Arts offers a wide range of social science methods courses and has a strong contingent of faculty who are actively engaged in methods training. However, as this Certificate Program grows, it will eventually rely upon cross-college collaboration. Interdisciplinary methods programs seem to enjoy the most success when they are situated in cross-university collaborations (Aldrich 2014). The sections below explain how we will develop the cross-university collaborations that will yield the resources needed to support the Certificate Program.

### **VI.a. Course Offerings & Expertise**

The Certificate Program will engage with those departments that offer social science methods training, as well as those whose graduate students require such training. The Certificate Program's Advisory Committee will be made up of faculty across the university who regularly teach graduate-level social science methods courses. These faculty members will be the Consortium Faculty. The Consortium Faculty will help to coordinate course offerings and facilitate appropriate Certificate Program student access to methods courses in their departments.

Given the current resources of the College of Liberal Arts and the course offerings and resources of our collaborators outside the college, our collection of current unit offerings and resources will be much broader than any single unit or college could provide. As such, new courses will not be necessary to the immediate success of the Certificate. Appendix C provides a summary of the research methods courses currently offered at UNLV (College of Liberal Arts offerings are presented in Table 1, and other relevant course offerings are presented in Table 2). If students are able to choose more freely among these courses, they will have the opportunity to create an impressive program of study that is closely tailored to their needs and interests. Of course, some barriers may have to be removed from the path. Many of the courses listed have specific prerequisites. Nearly all of the advanced courses require the instructor's permission, either officially or in practice. It is not practical or desirable to eliminate all prerequisites. However, we will need to work toward the development of a baseline level of faculty support, such that faculty will be willing to admit Certificate Program students into their courses. The Consortium Faculty across the University will be

critical in creating solutions to best to achieve this goal without compromising the interests of faculty members and departments.

An additional barrier to cross-disciplinary cooperation is the scheduling of courses. Some level of collaboration will likely be required to ensure that needed courses are regularly available for students to take. Again, the Consortium Faculty will be critical to this task. The Certificate Program's application process can help departments to anticipate the number of students from other departments who plan to take specific methods courses in a given semester. The Certificate Program coordinator will share this information directly to departments and their Consortium Faculty, giving graduate coordinators and Consortium Faculty in the relevant departments the information they will need to plan several semesters in advance.

Students will also be able to supplement the University's current and future course offerings with offerings from other accredited institutions. For example, the University is part of the Inter-University Consortium for Political and Social Research (ICPSR). Each summer, the ICPSR offers a number of high quality social science courses through their Summer Program.<sup>2</sup> Programs like these often allow students to arrange with their home institutions to obtain academic credit for their work at the external program. Of course, this requires a policy on the part of the home institution, unit, and department to allow for independent study grades to be assigned for participation in the external program. Consortium Faculty will be able to advise their home department majors on this issue and work with their graduate coordinators to develop avenues to access these important resources.

## **VI.b. Administration**

As the program begins, the budgetary needs will be relatively minimal. The Consortium Faculty will contribute a small amount of time as service to the University. The Certificate Program Coordinator will receive a three-credit (is this enough) reassignment from the relevant Dean (typically the Dean of the College of Liberal Arts).

As the Colloquium Series matures, we plan to collaborate with other units to establish a funding mechanism for invited speakers and discussants to participate in the colloquia.

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<sup>2</sup>See [www.icpsr.umich.edu/icpsrweb/sumprog/](http://www.icpsr.umich.edu/icpsrweb/sumprog/) for details on the program.

## VII. Admissions Procedures

Certificate Programs like the one envisioned here are generally supplements to advanced degrees in social science fields. As such, admission to the Certificate Program will be open only to students who have been admitted to a masters or doctoral program in which social science methods are relevant.

Applications for the Certificate Program will be accepted from students who have earned at least a B+ in an approved research design course (see Table 1) or its equivalent.<sup>3</sup> This is generally the first course in the required methods series in the student's home department (see Appendix A). This serves as an important safeguard to ensure that those accepted into the Certificate Program have the aptitude and preparation to succeed in advanced research methods courses. Since most students take this course during their first semester, admission to the Certificate Program will generally be open to students in their second semester of the graduate program.

Table 1: Approved Prerequisite Courses

ANTH 790	Research Design, Professional Ethics, and Grant Writing
PSC 701	Research Design and Methodology
PSY 707	Research Methods
SOC 702	Quantitative Methods

Upon successful completion of their first methods course, applicants will be required to submit an application to the Certificate Program. This application will include a proposed list of courses as part of a “plan of study.” This plan of study will require consultation with a member of the Consortium Faculty and the approval of the home department's graduate coordinator. This plan may include courses already completed. The list of courses in the plan of study should mind the prerequisites for the courses listed. For example, students may need to demonstrate mastery of certain math skills before taking courses in advanced statistical modeling techniques. The application will also indicate how the selection of courses prepares the student for the research to be conducted as part of the doctoral dissertation, master's thesis, or other required research project. This application will be considered by a subcommittee of the Certificate Program Advisory Council. Changes to the plan of study will require approval through these same channels.<sup>4</sup> Each year, the application deadline will be February 1.

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<sup>3</sup>The Certificate Coordinator will be in charge of approving any waivers or substitutions.

<sup>4</sup>The procedures laid out here mirror closely those explicated by Cobb and Krosnick (2006) for the MAPSS certificate (Stanford University N.d.).

## VIII. Certificate Program Requirements

Appendix D provides a summary of the requirements of eight social science methods certificate programs. These programs vary widely in terms of the number of credits required and the flexibility of the requirements. Some programs focus on a particular kind of methodology; these programs have far less flexibility in terms of course selection. What these programs have in common, however, is that students are required to obtain advanced skills from outside their home department.

### VIII.1. Courses

In making determinations about course requirements, it is important to consider both the courses already available at UNLV (see Appendix C) and the methods requirements already in place by most social science departments. Most social science departments require at least one (and often two or three) research methods courses for the Ph.D. These are almost always taken in the student's home department. The requirements for a number of relevant graduate programs are summarized in Appendix A. Students are expected to build their plans of study around their home departments' core requirements. Generally, the requirements of the Certificate Program would add between one and three additional courses to the home department's core requirements.

The Certificate Program requires a total number of about fifteen credit hours (generally five methods courses) for the Certificate Program requirement.<sup>5</sup> For many students, this will be two or three courses above and beyond their department requirements. This represents a good compromise between the interest in providing well-rounded methods training and the need to avoid bottlenecks and help students move more quickly toward completion. Incidentally, many of the federal government jobs for research statisticians require at least fifteen credit hours of statistics and research methodology courses.<sup>6</sup>

The remaining twelve credits may be chosen from the relevant social science methods courses offered at UNLV. Again, students are expected to build their degree plans around their home departments' core requirements. A list of these courses is presented in Appendix C. Courses taken for credit at other institutions or via independent studies (as in ICPSR courses) can be incorporated into the degree plan by consent of the Certificate Coordinator where appropriate. Because this Certificate Program is interdisciplinary, at least three credits of the fifteen required must be taken outside the student's home department. In the beginning,

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<sup>5</sup>This credit hour total includes the credits earned in the prerequisite research design course.

<sup>6</sup>We have not conducted a systematic search of these jobs. However, a search of [www.usajobs.gov](http://www.usajobs.gov) for keyword "statistician" yields a high proportion of examples of entry level jobs in research statistics that require 15 credit hours of statistics, mathematics, and related research methods courses.

of course, this might be a practical necessity; most departments simply do not offer enough unique methods courses to get students to the 15 credit benchmark without taking courses from other programs.

## **VIII.2. Colloquium and Research Requirement**

Many of the programs in Appendix D require either a dissertation with a methods focus or participation in a colloquium series. Those that require presentation in a colloquium series may be indirectly encouraging students to utilize such methods in their dissertations, portions of which may be presented in the required colloquium presentation for credit.

The Certificate Program proposed here will also require participation in the Colloquium Series. The Colloquium Series will consist of presentations by Consortium Faculty and Certificate Program students about their own research. As the Colloquium Series evolves, we will pursue resources that can support its growth into robust series of lectures and workshops featuring outside speakers. We will also work toward co-sponsoring presentations in other speaker series on campus, including the University Forum Lectures and the Department of Mathematical Sciences Statistics Colloquium Series. We will also pursue collaborations with units like the University Libraries to provide hosting and advertising support for the Colloquium Series.

## **VIII.a. Sample Programs of Study**

Table 2 on page 11 presents sample programs of study for two doctoral students: one in political science and one in sociology.

## **VIII.b. Learning Outcomes**

1. Students will demonstrate an interdisciplinary understanding of social science research methods.
2. Students will develop research methods specialization in the methods most useful for their social science research topic.
3. Students will engage in high-level original research involving the use of social science research methods.

Table 2: Sample Programs of Study

Political Science Ph.D. Student	
PSC 701	Research Design & Methodology
PSC 702	Advanced Quantitative Methods I
PSC 704	Advanced Qualitative Methods
ANTH 638	Ethnographic Field Models
SOC 757	Urban Field Methods
Sociology Ph.D. Student	
SOC 701	Logic of Social Inquiry
SOC 702	Quantitative Methods
SOC 704	Advanced Analytical Techniques
SOC 705	Qualitative Methods
PSC 703	Advanced Quantitative Methods II

### VIII.c. Curriculum Alignment of Learning Outcomes

1. Because students will be taking their home department's required methods series, students will develop the discipline-specific knowledge they will need in order to teach introductory and/or specialized methods courses within their discipline.
2. The requirement that students take at least three credits outside of their home department will allow students to develop an interdisciplinary understanding of social science research methods.
3. The research method specialization will be targeted to each student's research question with the guidance of the Consortium Faculty member who helps the student prepare the plan of study required for admission to the Certificate Program. This plan of study will ensure that course choices are tailored so as to provide the student a unique specialization in the methods required to best address the student's research question.
4. The Colloquium Series presentation and research requirements ensure that students will complete and present high-level original research using the appropriate social science methods.

### VIII.d. Methods, Instruments, and Analysis

The success of the program will be measured using four different instruments: (1) informal exit interviews by the Certificate Program Coordinator, (2) an exit survey graduating students, (3) a summary of the student's research as presented in the colloquium, and (4) alumni feedback. Each of these instruments will be designed to measure success in the four learning outcomes listed above.

#### **VIII.d.1. Informal Exit Interviews**

The Certificate Program Coordinator will design an instrument that poses open-ended questions. The Coordinator will then request informal exit interviews with graduating students when those students submit their completion packets for approval. In the early days of the program, the Coordinator will attempt to interview all graduating students. As the program expands, the Coordinator will solicit exit interviews with a random sample of graduating students. In these interviews, program success would be gauged through the positive responses of a majority of students to questions about program satisfaction, self-reported increases in knowledge, and anticipated impact on employment prospects.

#### **VIII.d.2. Exit Surveys**

The Certificate Program Coordinator will design a survey instrument that uses Likert scale items and open-ended questions. The Coordinator will distribute the survey to graduating students when those students submit their completion packets for approval. Success will be gauged through a high mean in the responses to Likert scale items measuring program satisfaction, self-reported increases in knowledge, and anticipated impact of employment prospects.

#### **VIII.d.3. Summary of Colloquium Presentation**

The Certificate Program Coordinator will design an instrument to be used by each student's Consortium Faculty contact to summarize and assess the student's culminating research project and presentation. The Certificate Program Coordinator will assemble summary statistics characterizing the appropriate selection, application, and integration of social science research methods in graduating students' culminating research project colloquium presentations. Success will be gauged through colloquium summaries from a majority of the Consortium Faculty that note appropriate choice, application, and presentation of social science research methodology.

#### **VIII.d.4. Alumni Feedback**

The Certificate Program Coordinator will maintain a list of graduates of the Certificate Program. Each year, the Coordinator will contact the previous year's graduates to gauge their employment status and retrospective satisfaction with the Certificate Program. Success will

be measured by a high proportion of graduates (1) working in relevant fields, and (2) expressing retrospective satisfaction with the Certificate Program.

### **VIII.e. Analysis and Reporting**

The Certificate Program Coordinator will be responsible for data analysis and reporting.

### **VIII.f. Process for Program Improvement**

The Certificate Program Coordinator will gather the qualitative and quantitative data and produce an assessment report for each reporting period. The Coordinator will monitor whether changes have been implemented and their effects on student achievement of learning outcomes. The Coordinator will disseminate the results to the Consortium Faculty and other appropriate stakeholders.

## **IX. Certificate Program Administration**

The Certificate Program would be administered by a faculty Program Coordinator. The appointing authority for this Coordinator will be the Dean of the College of Liberal Arts, where the Certificate Program is housed.

In addition, a group of affiliated faculty members will be invited by the Coordinator to serve as Consortium Faculty. The Consortium Faculty will make up the Advisory Committee. This committee may also be involved in any number of additional tasks, such as approving student applications, hosting and presenting at the Colloquium Series, assisting with recruitment efforts, and the like.

### **IX.a. Recruitment**

Preliminary discussions with graduate students in Political Science, Anthropology, and Sociology suggest that there is significant interest in the Certificate Program. In early 2016, we conducted a survey of graduate students College of Liberal Arts social science departments to assess the level of interest in this Certificate Program. A copy of the survey instrument

and descriptive statistics are found in Appendix E. Generally, the respondents were enthusiastic about the possibility of obtaining a methods certification in conjunction with their graduate degree. We interpret our results to suggest that we might expect a beginning cohort of perhaps a dozen or so students.

Our hope is that information about the Certificate Program could be provided by the Graduate College to incoming students as they apply for our social science doctoral programs. This information could be integrated into the Rebel Gateway system. Individual departments may also include information about and links to the Certificate Program on their doctoral program websites. A broader advertising campaign would certainly be beneficial, to the extent that such advertising would be possible given limited financial resources.

The Certificate Program, once it is up and running, will increase the ability of the Graduate College and the College of Liberal Arts to attract high quality social science graduate students to UNLV. Although the need for interdisciplinary social science methods training is very well established, there are surprisingly few institutions that have overcome administrative inertia to create such a program in-house. This will make UNLV a particularly attractive place for graduate students looking to pursue research-oriented careers. For this reason, we are likely to see strong returns on the investment in advertising the Certificate Program.

## **IX.b. New Courses**

At the outset, no new courses will be needed. However, as the Certificate Program progresses, departments will have more time and resources available to dedicate to the development of new advanced social science methods courses. Departments will not have to rely on their own majors to fill all of their courses, and their own majors will have access to courses in other departments. In this way, departments will be able to specialize in courses in particular methods. This cooperation and information sharing among departments, facilitated by the Certificate Program Coordinator, will cut down significantly on duplicated effort among departments.

## **IX.c. Administrative Budget**

As the program begins, the budgetary needs will be relatively minimal. The Consortium Faculty will contribute a small amount of time as service to the University. The Certificate Program Coordinator will receive a three-credit (is this enough) reassignment from the relevant Dean (typically the Dean of the College of Liberal Arts).

As the Colloquium Series matures, we plan to collaborate with other units to establish a funding mechanism for invited speakers and discussants to participate in the colloquia.

#### **IX.d. Accreditation Requirements or External Partnerships**

At present, we do not envision needing or requiring external accreditation or external partnerships. At present, there are no known accreditation bodies that certify social science research methods certificates. We may in the future pursue partnerships with entities off-campus, but we do not anticipate these as being fundamental to the success or vitality of the program in its formative years.

### **X. Graduate Catalog Information**

#### **X.a. Program Description**

The Social Science Methods Certificate Program provides students with an expanded breadth of methodological training for graduate students in relevant disciplines. This program encompasses the full range of empirical social science methods and is interdisciplinary by design. Students will gain a broad understanding of the role and forms of methodology in the social sciences. Students will gain expertise in the methods most relevant to their research question. This expertise will be demonstrated in the original research and colloquia presentations they produce.

#### **X.b. Admission Requirements**

To be admitted to the program, students must:

1. be admitted to a masters or doctoral program at UNLV for which social science research methods are an appropriate tool of inquiry.
2. have earned at least a B+ in an approved research methods course (see Table 1 or equivalent prior to admission to the program.
3. submit a completed application and the required application fee.
4. must submit a “plan of study” that has been approved by a member of the Consortium Faculty and the home department’s graduate coordinator.

## **X.c. Degree Requirements**

Course Requirements:

1. 15 credit hours of social science methods courses as outlined in the approved “plan of study,” such that
  - three credits are an approved research design course (see Table 1);
  - the grade point average for all courses counted toward the degree is at least 3.00;
  - no grades lower than a B- are counted toward the certificate requirements;
  - at least three credits are from outside the student’s home department; and
  - any changes to the plan of study has prior approval of the Certificate Coordinator
2. Presentation of original capstone research in the Colloquium Series.

## **X.d. Culminating Experience and Graduation Requirements**

The Certificate Program requires the presentation of original research in the Colloquium Series. This research will often be conducted as part of the culminating experience for the graduate degree (which is usually the successful defense of the doctoral dissertation or masters thesis). The student must submit all required forms to the Graduate College and then apply for graduation in MyUNLV by the appropriate deadline.

## References

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# Appendix A Methods Course Requirements

Table 3: Current Methods Requirements: College of Liberal Arts

Program	Required Courses
<b>Anthropology</b> Ph.D.	<ul style="list-style-type: none"> <li>- ANTH 790: Research Design, Professional Ethics, and Grant Writing</li> <li>- ANTH 770: Quantitative Methods in Anthropology (or equivalent)</li> </ul>
<b>Anthropology</b> Ph.D. Stream	<ul style="list-style-type: none"> <li>- ANTH 790: Research Design, Professional Ethics, and Grant Writing</li> <li>- ANTH 770: Quantitative Methods in Anthropology (or equivalent)</li> </ul>
<b>Anthropology</b> M.A.	<ul style="list-style-type: none"> <li>- ANTH 790: Research Design, Professional Ethics, and Grant Writing</li> <li>- ANTH 770: Quantitative Methods in Anthropology (or equivalent)</li> </ul>
<b>Political Science</b> Ph.D.	<ul style="list-style-type: none"> <li>- PSC 701: Research Design and Methodology</li> <li>- PSC 702: Advanced Quantitative Methods I</li> <li>- PSC 703: Advanced Quantitative Methods II <i>or</i></li> <li>- PSC 704: Advanced Qualitative Methods <i>or</i></li> <li>- a foreign language or other research tool</li> </ul>
<b>Political Science</b> M.A.	<ul style="list-style-type: none"> <li>- PSC 701: Research Design and Methodology</li> <li>- PSC 702: Advanced Quantitative Methods I</li> </ul>
<b>Psychology</b> Ph.D. Clinical Psychology	<ul style="list-style-type: none"> <li>- PSY 707: Research Methods</li> <li>- PSY 708: Statistics for Psychologists I</li> <li>- PSY 709: Statistics for Psychologists II</li> <li>- PSY 712: Psychometrics</li> </ul>
<b>Psychology</b> M.A./Ph.D. Experimental Psychology - Quantitative/Experimental Track	<ul style="list-style-type: none"> <li>- PSY 707: Research Methods</li> <li>- PSY 708: Statistics for Psychologists I</li> <li>- PSY 709: Statistics for Psychologists II</li> </ul>
<b>Psychology</b> M.A./Ph.D. Experimental Psychology - Cognitive Emphasis	<ul style="list-style-type: none"> <li>- PSY 707: Research Methods</li> <li>- PSY 708: Statistics for Psychologists I</li> <li>- PSY 709: Statistics for Psychologists II</li> <li>- PSY 717: Cognitive Methods</li> </ul>
<b>Psychology</b> M.A./Ph.D. Experimental Psychology - Neuroscience Track	<ul style="list-style-type: none"> <li>- PSY 707: Research Methods (General or Cognitive Emphasis)</li> <li>- PSY 708: Statistics for Psychologists I</li> <li>- PSY 709: Statistics for Psychologists II</li> <li>- PSY 720: Systems and Cognitive Neuroscience</li> </ul>
<b>Psychology</b> M.A./Ph.D. Experimental Psychology - Developmental Track	<ul style="list-style-type: none"> <li>- PSY 708: Statistics for Psychologists I</li> <li>- PSY 709: Statistics for Psychologists II</li> <li>- PSY 713: Developmental Research</li> </ul>
<b>Sociology</b> Ph.D. Sociology	<ul style="list-style-type: none"> <li>- SOC 701: Logic of Social Inquiry</li> <li>- SOC 702: Quantitative Methods</li> <li>- SOC 704: Advanced Analytical Techniques</li> <li>- SOC 705: Qualitative Methods</li> </ul>

Table 4: Current Methods Requirements: Other Social Science Programs

Program	Required Courses
<b>Communications</b> M.A.	– COM 710: Rhetorical-Critical Research Methods – COM 712: Empirical Research Methods
<b>Economics</b> M.A.	– ECO 770: Econometrics I, Statistical Modeling – ECO 772: Econometrics II – ECO 793: Seminar in Research Methods
<b>Criminal Justice</b> M.A.	– CRJ 702: Proseminar on Research Methods
<b>Public Affairs</b> M.P.A.	– PUA 721: Quantitative Methods – PUA 723: Research Design – PUA 725: Program Evaluation
<b>Public Affairs</b> Ph.D.	– PAF 710: Theory and Design of Research – PAF 711: Advanced Seminar in Quantitative Research in Public Affairs – Additional 6 credits of research methods

# Appendix B GCQP Approval Memo

Office of the Executive Vice President & Provost

## MEMORANDUM

5 May 2015

**To:** UNLV Campus Community  
**From:** Carl L. Reiber  
Vice Provost for Academic Affairs

**Subject:** Approval – Graduate Certificate in Quantitative Psychology

The **Graduate Certificate in Quantitative Psychology** (12 credits) has been approved. This is the final approval.

The certificate in Quantitative Psychology provides graduate students with advanced training in statistical, psychometric, methodological, and computational procedures. The certificate equips students to improve the quality of their substantive research and to obtain positions in academia, industry, and the private sector. Students will complete 12 credits of advanced quantitative courses, at least six of which are from the Department of Psychology.

Effective: Fall 2015

Please note for lists, databases, and generation of appropriate codes, etc.

For more information contact:

**College/School:** College of Liberal Arts  
**Department/Unit:** Department of Psychology – 702-895-3305  
**Contact Person:** Dr. Kim Barchard  
**Contact Person's Phone:** 702-895-0758  
**Contact Person's E-mail:** [kim.barchard@unlv.edu](mailto:kim.barchard@unlv.edu)

CR:gg/kf

View all Provost Alerts at: <http://provost.unlv.edu/vpaa/alerts/>

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Kristene Fisher, Executive Director  
for the Office of the Vice Provost for Academic Affairs  
Direct Line (702) 895-5182 / Main Office (702) 895-1267  
FAX (702) 895-3670 / FDH 703 / Mailstop 1099  
[kristene.fisher@unlv.edu](mailto:kristene.fisher@unlv.edu)  
<http://provost.unlv.edu/vpaa/>

## Appendix C Existing UNLV Courses

Table 5: Research Methods Courses *as of Fall 2014*: College of Liberal Arts

Course & Title	Prerequisites	Course Description
ANTH 617: Evolution & Culture: Darwinian Models of Culture*		Humans depend on complex cultures for their survival. Why it is the case, how it is made possible and how fundamentally culture affects humans have always been essential focuses of the anthropological research. The courses will present the main models of cultural evolution found currently in the anthropological literature.
ANTH 622: Psychological Anthropology*		Examines how culture influences the development of character and conduct in non-western societies. Provides cross-cultural research findings on socialization, aggression, sexual behavior, mental illness and social pathology. Research findings from small-scale and complex societies from around the globe are evaluated.
ANTH 638: Ethnographic Field Models		Surveys methods and techniques of field work. Students do weekly ethnographic projects and write short reports.
ANTH 654: Ethnoarchaeology*	consent of instructor	Theoretical foundations, methods, and issues associated with an ethnoarchaeological approach. Explores present interactions of people within their environments and the formation, patterns, and meaning of the archaeological record.
ANTH 656: Archaeology of Technology*	consent of instructor	Explores the methodological and theoretical developments in archaeological research on technology and the challenges of connecting materials with human behavior and intent in the past.
ANTH 743: Seminar in Method and Theory in Cultural Anthropology		Research and discussion of selected topics relating to data gathering, interpretation, or theoretical explanation in socio-cultural anthropology. Specific topics and instructor vary.
ANTH 770: Quantitative Methods in Anthropology	MIS 101 or CSC 115 or equivalent or consent of instructor	Provides practical introduction to the uses of computers for statistical analysis, data gathering and storage, computer modeling and computer-assisted instruction as applies in anthropology. Every student carries out one or more projects requiring the use of computers.
ANTH 790: Research Design, Professional Ethics, and Grant Writing for Anthropologists	graduate standing or consent of instructor	Class components include ethics relating to data acquisition and sharing, formulating cohesive and compelling research questions, and the mechanics of proposal preparation required in professional practice. All students will be required to prepare and present a research proposal.
ENG 700: Bibliography and Methods	to be taken in the students first year of graduate study	Bibliography, reference tools, introduction to scholarly methods, modern research techniques in language and literature, preparation and presentation of documented investigation.
PSC 701: Research Design and Methodology	graduate standing	Exposes graduate students to a body of literature and a set of ideas about doing sound social science research, either applied or non-applied. Emphasis on injecting scientific and theoretical rigor into the investigation of political phenomena.
Continued on next page		

Table 5 – continued from previous page

Course & Title	Prerequisites	Course Description
PSC 702: Advanced Quantitative Methods I	PSC 701 or equivalent and graduate standing	Review of basic statistical techniques and in-depth treatment of bivariate and multivariate regression analysis, including regression diagnostics and remedies for assumption violations. Also introduces advanced statistical estimation techniques including robust regression, time-series analysis, and maximum likelihood estimation.
PSC 703: Advanced Quantitative Methods II	PSC 701 and PSC 702	This course builds upon PSC 701 and PSC 702 to examine advanced research methodological techniques used in the social sciences including maximum likelihood estimation, time series analysis, and formal modeling.
PSC 704: Advanced Qualitative Methods	PSC 701 and PSC 702	This course examines advanced qualitative research techniques used in the social sciences including inference, causality, measurement, process tracing, and typological theory.
PSY 707: Research Methods	admitted Ph.D. Psychology students only	Advanced treatment of the issues involved in planning, conducting, and evaluating research.
PSY 708: Statistics for Psychologists I	admitted PhD Psychology students only	Treatment of analysis of variance and multiple comparison methods applied to psychological research.
PSY 709: Statistics for Psychologists II	admitted PhD Psychology students only	Treatment of correlation, multiple regression, chi-square, and analysis of covariance as applied to psychological research.
PSY 710: Multivariate Analysis in Psychology	PSY 708 and 709 or equivalent and admitted Ph.D. Psychology students only	Examination of multivariate statistical techniques including topics such as multivariate analysis of variance and covariance, discriminant function analysis, profile analysis, principal components analysis, and canonical correlation.
PSY 711: Advanced Seminar in Psychological Statistics	PSY 708 and PSY 709 and admitted Ph.D. students only	Examination of advanced statistical techniques such as non-parametric statistics, meta analysis, time-series analysis, and structural equation modeling.
PSY 712: Psychometrics	admitted Ph.D. students only	Principles of evaluating and constructing psychological tests using psychometric theory and behavioral assessment methodology.
PSY 713: Developmental Research	admitted Ph.D. students only	Application of theory, methods, designs, analyses, and interpretation of research in developmental psychology.
PSY 717: Cognitive Methods	admitted Ph.D. students and consent of instructor	Overview of cognitive and neuroscience research methods, including demonstrations of equipment and software that is used for conducting experiments and analyzing results.
SOC 701: Logic of Social Inquiry	consent of graduate coordinator	Advanced introduction to theoretical and methodological approaches in contemporary sociology and their interrelationship. Emphasis on three major paradigms in contemporary sociological research, their assumptions, operational strategies and policy implications.
SOC 702: Quantitative Methods	consent of graduate coordinator	In-depth review of procedures and issues associated with research design, measurement, sampling, and questionnaire construction in the conduct of survey research, experimentation, and other quantitative research techniques utilized by sociologists.

Continued on next page

Table 5 – continued from previous page

Course & Title	Prerequisites	Course Description
SOC 704: Advanced Analytical Techniques	consent of graduate coordinator	Advanced data base creation and analysis including study of appropriate statistics, mainframe computer experience with mass data software, analytical techniques with varying methodologies, data modeling.
SOC 705: Qualitative Methods	consent of graduate coordinator	Gives students in-depth training in a variety of qualitative methods, both traditional and new (participant observation, latent content analysis, semiotics, deconstruction, conversation analysis, feminist methodology and critique, etc.). Explores both the theoretical justifications of each method and gives a hands-on experience in their various applications.
SOC 717: Urban Demography and Population Studies	SOC 702, SOC 704 and SOC 711	Training in quantitative techniques used by researchers in urban population studies. Students will become familiar with available sources of data, the measures of population composition and change, and will receive practical training on how to conduct their own research.
SOC 757: Urban Field Methods	SOC 705 and SOC 756	Training in methods for conducting qualitative research in urban settings. These include participant observation, interviewing, archival narrative analysis, and visual studies. Students will conduct their own research and discuss their emerging findings.
SOC 774: Seminar in Feminist Theories and Research	consent of instructor and graduate standing	Current issues in feminist theories and research and feminist critiques of social sciences. Discussions of theoretical as well as epistemological and methodological issues.

Table 6: Research Methods Courses as of Fall 2014: Other Relevant Courses

Course & Title	Prerequisites	Course Description
AAE 770: Research Methods in Environmental Design		Survey of research methods in environmental design. Quantitative and qualitative methods used in researching design, social/behavioral and technical problems in architecture.
AAL 665: GIS Planning Methods		This course may also be used for graduate elective credit. For a description of this 600-level course, please consult the current UNLV Undergraduate Catalog where it is listed as a 400-level class.
ACC 705: Research Methods in Federal Taxation	ACC 410 or ACC 610 or equivalent.	Federal tax research methodology as related to practical problem solving in the areas of accounting practice and administrative tax procedures before the Internal Revenue Service and the United States Tax Court.
BIOL 701: Ethics in Scientific Research	graduate standing	Examination of ethical problems in scientific research, including the falsification and manipulation of data, public access and peer review, and decisions concerning research problems and support.
Continued on next page		

Table 6 – continued from previous page

Course & Title	Prerequisites	Course Description
CEE 700: Research Methods in Civil and Environmental Engineering		Methods to improve and develop research skills and prepare students for professional careers at the graduate level. Includes principles of scientific research, ethics, writing skills, methods for compiling scientific literature, identification of research questions and specific hypotheses, presentation of research results, writing research papers, proposal preparation, preparation of grant proposals, thesis and dissertation.
COM 711: Rhetorical-Critical Research Methods		Methods of describing, analyzing, interpreting, and judging public discourse. Study critical theory and practice. Research and write original critical essays.
COM 712: Empirical Research Methods		Fundamentals of scientific philosophy, research design, and data analysis; writing and critiquing research reports.
COM 730: Theories of Communication	graduate standing	Exploration and explanation of communication phenomena. Survey of theoretical ideas, nature of theory in general, major communication theories and theories relevant to communication, and examines purpose of theory in communication research.
CRJ 702: Proseminar on Research Methods	graduate standing in criminal justice or consent of instructor and satisfactory completion of an undergraduate course in research methods	Methods and applications of quantitative and qualitative research. Relationships among theory, research, and social policy. Development and interpretation of research reports.
CRJ 711: Criminological Research	CRJ 701 & 702, graduate standing or consent	Correlates of crime and theory-based research on crime causation. Implications for the major theoretical perspectives.
CRJ 724: Applied Research in Criminal Justice	CRJ 701, CRJ 702, CRJ 703	Survey of research and statistical methods appropriate for evaluating criminal justice programs. Nature and role of program evaluation; impact and process assessment; presentation and interpretation of statistical results, ethics and politics of evaluation research.
CS 740: Statistical Pattern Recognition	STA 667, MATH 253 or 265, and CS 302	Concepts and formal theoretical structures necessary for design and implementation of a pattern recognition system. Topics include: parametric and non-parametric methods, linear and non-linear classifiers and clustering algorithms.
CS 741: Structural Pattern Recognition	CS 656 and CS 677	Survey of advanced pattern recognition techniques. Topics include: graph matching methods, syntactic approaches, neural nets, and context-dependent methods.
EAB 700: Research Methods for Public Health	EAB 703 or consent of instructor	Provides a foundation in research methodology for public health professionals. Topics include basic sampling and experimental designs, quantitative and qualitative methods in research, mathematical and economic models in research, and multidisciplinary approaches to designing research programs.
EAB 703: Biostatistical Methods for the Health Sciences	undergraduate mathematics through calculus, comparable graduate coursework, or consent of instructor	Designed to provide a foundation in biostatistics for graduate students in the health sciences. Topics include probability, distributions, estimation, hypothesis testing, ANOVA, simple and multiple regression, vital statistics, and nonparametric methods.

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Table 6 – continued from previous page

Course & Title	Prerequisites	Course Description
EAB 704: Research Integrity & Ethics		Designed to provide students with an understanding of how to conduct responsible research. Covers the concepts of scientific ethics and integrity broadly in order to provide a foundation for future research professionals. Topics include ethical principles, peer review, mentoring, IRB, collaborative research, and scientific record keeping.
EAB 753: Nonparametric Statistics for Public Health	graduate level biostatistics	Designed to provide a strong foundation in nonparametric statistical methods commonly used in public health. Topics explored in the course include ranked data, transformation of ranks, methods for paired and independent samples, nonparametric regression and correlation, categorical data analysis, and robust estimation.
EAB 773: Survival Analysis for Public Health	EAB 753 and EAB 763	Explores the broad area of survival analysis for analyzing data derived from laboratory, clinical, and epidemiological studies. Methods explored in this course include survival functions, data censoring, hazard models, regression models, and parametric/nonparametric methods for comparing survival models.
EAB 783: Multivariate Methods for the Health Sciences	EAB 773 or consent of instructor	Provides an in-depth coverage of common multivariate methods. Topics include multivariate correlation and regression, multivariate ANOVA, logistic regression, factor analysis, time series analysis, and principle component analysis. Emphasis placed on application of techniques useful for students in the health sciences.
ECEM 731: Risk Assessment, Mitigation and Communication	admission into program	This course explores the use of “risk” in making individual and group decisions. We will explore qualitative and quantitative methods for evaluating risk and develop practices to use such information to improve decision making processes in the context of emergency management.
ECO 770: Econometrics I. Statistical Modeling	graduate standing and previous statistics course or consent of instructor	The course reviews fundamentals of mathematical statistics, that are used in econometric analysis. It integrates mathematical models and statistical techniques to perform regression analysis of cross-sectional data with a policy focus. Topics include empirical model building, estimation, and specification and data problems.
ECO 772: Econometrics II	graduate standing, ECO 740, and ECO 770	Building on econometrics I, this course extends econometric/quantitative skills in the estimation and testing of economic theory. Topics include instrumental variables and two stage least squares estimations, simultaneous equation models, qualitative dependent variable models and sample selection corrections, measurement error issues, introduction to time series and panel data methods.
ECO 793: Seminar in Economic Research	graduate standing in Economics	Provides students with hands-on training in empirical modeling, promotes critical thinking, teaches use of tool kit of research techniques and reinforces the students understanding of economic concepts relating to economics research.
EMBA 705: Applied Statistics	admission to the Executive MBA Program and approval of the Deans Office	Effective business research and decision making with the aid of statistical analysis. Hands-on experience with computer spreadsheet software. Covers how to find, manage, analyze, interpret, and effectively present actual business and economic data.

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Table 6 – continued from previous page

Course & Title	Prerequisites	Course Description
ENV 725: Quantitative Methods for Environmental Science		Quantitative research tools specifically developed for environmental science including models, data collection and statistical methods, both univariate and multivariate analyses. Emphasis on methods appropriate to student theses and dissertations.
ENV 685: Seminar on Advanced Topics in Spatial Analysis	ENV 480 or ENV 680 or CEE 468, CEE 668 or GEOL 430 or GEOL 630 or equivalent	Students will review and discuss current applied environmental and socioeconomic research in GIS/Spatial Analysis. Readings will be drawn from key journals in the field of environmental studies, regional science, spatial analysis, and urban planning. Students will present and discuss case studies with advanced spatial analysis.
EOH 702: Community Based Participatory Research Methods		Teaches the philosophy and methods of community based participatory research. Focus on traditional research methods and their application to community health research as well as strategies for developing research partnerships, community consent, and essential competencies for research with diverse communities.
EOH 704: Research Integrity & Ethics		Research Integrity and Ethics.
EOH 715: Qualitative & Field Methods for Public Health		This course will provide students with the content/skills needed to conduct community-based participatory field research. This course will explore several topics related to qualitative research: theoretical aspects of qualitative research, negotiating community, designing the study, ethnographic observations, triangulating data, and writing a field study report.
EPY 702: Research Methods		Early entry graduate-level survey of research methods with emphasis on comprehension of educational research literature. Includes scientific method, locating and summarizing published research, sampling, measurement, statistics, research design, and critique of published research.
EPY 710: Survey Methods and Design	EPY 702 or consent of instructor	Systematic analysis of survey design and research conducted using survey techniques with emphasis on how to effectively plan and conduct mail, electronic, and other self-administered.
EPY 716: Evaluation Research Methods	EPY 702 and 721 (may be taken concurrently)	Addresses the definition and purposes of evaluation research including its potential uses and limitations. Examines models of evaluation research and their application in a variety of settings.
EPY 718: Qualitative Research Methodologies	EPY 702	Qualitative approaches to exploring phenomena related to educational and other social contexts. Attention given to theoretical and practical considerations of case studies, ethnographies, participant observation and narrative reports; discussion of criteria for establishing goodness of qualitative studies.
EPY 719: Advanced Qualitative Research	EPY 702 and EPY 718, field work using qualitative methods may be required	Qualitative approaches to exploring phenomena related to educational and other social contexts. Analysis of data and presentation of findings. Specific emphasis on analysis of discourses from participant observation and/or interview data.
EPY 721: Descriptive and Inferential Statistics: An Introduction		Descriptive indices of central location and dispersion, correlation and regression, hypothesis testing and basic inferential techniques. Emphasis on intuitive understanding and applications in educational/behavioral measurement and research.
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Table 6 – continued from previous page

Course & Title	Prerequisites	Course Description
EPY 722: Inferential Statistics and Experimental Design	EPY 721	Intermediate- level coverage of inferential statistics and experimental design analysis covering commonly used techniques in educational and behavioral research with computer applications.
EPY 729: Qualitative Case Study Research	EPY 702 and EPY 718	Focuses on case studies within education. Students conduct in-depth, naturalistic case studies in educational settings to learn about theory, methodology, and methodological issues relevant to disciplined qualitative case study. Conducting interviews, data collection, coding, and analysis in a qualitative case study design.
EPY 730: Advanced Research Methods	EPY 702, EPY 721 and EPY 722	Compares strengths and weaknesses of experimental research designs, using this knowledge to improve design sensitivity. Includes hypothesis testing, threats to validity, power, and effect size. Considers controversies in quantitative research literature.
EPY 732: Multiple Regression and Path Analysis	EPY 722	Intermediate-level inferential statistics for experimental and non-experimental educational research covering general linear models including analysis of variance, regression (simultaneous, variable-selection, hierarchical approach), and path analysis, integrated with the use of statistical computer packages.
EPY 745: Categorical/Nonparametric Data Analysis	EPY 721, EPY 722, and EPY 732, project involving analysis of the students own research data may be required	Introduction to categorical/nonparametric data analysis, for use in small samples or when cases consist of categories or ranks. Topics include contingency tables (including loglinear models), nonparametric tests for ordinal and interval data, logistic and Poisson regression.
HOA 570: Quantitative Methods and Applications in Casino Gaming		Develops the techniques and methods for computing the probabilities, expected values, and house percentages of casino games and analyzes the effects of changes in playing rules and payoff odds.
HOA 732 Advanced Statistics in R for Hospitality and Business	HOA 730 or equivalent	Advanced statistical methods for analyzing time series data, including seasonal and non-seasonal ARIMA modeling. Statistical analysis of panel data (aka longitudinal or cross-sectional time-series data), which is a time series data for several entities, will also be covered. The statistical programming language R will be used in this class.
HOA 735: Research Methodology	graduate standing	Examination of research methods including: the scientific method, literature review, sampling, statistics, research design, and analytical technique.
HOA 796: Advanced Research Methodology	EPY 722	Fundamental principles of multivariate data analysis, including the mathematics behind the statistical techniques studied. Examination of quantitative research methods including sample size determination, validity, reliability and detection and handling of outliers.
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Table 6 – continued from previous page

Course & Title	Prerequisites	Course Description
HSC 777: Advanced Applied Statistics for the Health Sciences		Introductory course in statistics and introduction to research methodology course or consent of instructor. Application of advanced statistical procedures to the investigation of research problems in the health science professions. Emphasis on a conceptual understanding of selected advanced statistical techniques with application to the investigation and analysis of problems in the health sciences area.
INF 760: Advanced Theoretical Foundations of Informatics	INF 700	Advanced course to cover mathematical methods for information modeling, analysis, and manipulation. Requires various research article reading and discussions. Topics include proof techniques, first-order logic, computability theory, complexity theory, model theory, and statistics.
JMS 635: Mass Communication Research Methods		This course is approved for use in graduate programs for master of Arts candidates in the Hank Greenspun School of Journalism and Media Studies. Full descriptions of these courses may be found in the Undergraduate Catalog under the corresponding 400 number.
JMS 709: Introduction to Research Methods in Journalism and Media Studies		Introduction to methods used in JMS research, concentrating on tools students may encounter in developing literature reviews and papers, including theses or papers. Students demonstrate familiarity with methods by developing and presenting an original research paper that features the use of a methodological approach discussed in class.
JMS 711: Qualitative Research Methods	graduate standing	Fundamentals of humanistic research methodologies; examines such methods as case study, ethnography, focus groups, interviews, visual methods, and other qualitative and critical research methods.
JMS 712: Quantitative Research Methods	graduate standing	Fundamentals of scientific approach to research examined and applied; surveys, content analysis, and other methods appropriate to the study of journalistic and media messages, processes, and effects examined.
MAT 725: Mathematics for Operations Research I	MAT 661	Theory of stochastic processes, theory of queues, Markov processes, non-Markov processes, Markov chains, applications.
MAT 726: Mathematics for Operations Research II	MAT 671 and 673	Linear and non-linear programming, dynamic programming, Lagrange multiplier and duality theorems, control theory and optimal control, applications of programming.
MHA 635: Research Methodology (formerly MHA 735)	six or more credits in the MHA program	Examination of research methods including the scientific method, literature review, sampling, statistics, research design and analytical technique.
PAF 710: Theory and Design of Research	admission into program	Designed to develop in students the role of theory in designing research applicable to issues studied in public affairs. Beginning course in the Public Affairs Ph.D. programs analytical studies sequence.
PAF 711: Advanced Seminar in Quantitative Research in Public Affairs	PAF 710 or permission of instructor	Students in this course will become familiar with the conceptual foundations and appropriate applications of major social scientific approaches to data-gathering and analysis, with emphasis on quantitative multivariate analysis.

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Table 6 – continued from previous page

Course & Title	Prerequisites	Course Description
PAF 717: Theory and Practice of Public Sector Survey Research	admission to a graduate program	Provides theoretical and applied components of survey research. Students learn the basics of all elements of the survey process. Students will participate in an actual survey.
PUA 721: Quantitative Methods for Public Administration (formerly PUA 722)	PUA 701 or consent of instructor	Quantitative techniques used in program design and evaluation. Coverage includes such topics as measurement, tests of significance, and measures of association. Includes descriptive and inferential statistics and forecasting methods.
PUA 723: Research Design for Public Administration	PUA 701 or consent of instructor	Introduction to empirical research methods useful for analysis of public policies and programs. Includes techniques such as survey research, experiments, quasi-experiments, case studies, and qualitative methods. Students learn to understand, evaluate, and undertake basic empirical research of topics relevant to public administration and public policy.
PUA 725: Policy Analysis and Program Evaluation	PUA 721 and PUA 723 or consent of instructor	Introduces students to the practical aspects of program evaluation, and the methodologies employed to analyze a program and to conduct an evaluation in the public and nonprofit sectors.
PUA 727: Theory and Practice of Public Sector Survey Research	admission to a graduate program	Provides the theoretical and applied components of survey research. Students learn the basics of all elements of the survey process.
PUA 756: Policy Implementation		Provides students an introduction to current models of implementation and the means for assessing both theory and methods; provides a bridge between the literature on policy analysis and program evaluation; offers students the opportunity to apply theoretical frameworks to practical situations.
STA 715: Multivariate Statistical Methods	MATH 181, MATH 463 and one of the following: STAT 411, STA 663, STA 691	Multivariate techniques with emphasis on application. Topics include multivariate analysis of variance, discriminant analysis, canonical correlation and independence, principal component analysis, factor analysis, cluster analysis and analysis of repeated measurements.
STA 753: Bayesian Data Analysis	STA 667 or equivalent, or consent of instructor	This course will present methods for statistical modeling and data analysis from a Bayesian perspective. Topics include: Bayes Theorem, prior and posterior distributions, computational algorithms for posterior simulation, statistical software and programming, as well as model formulation and diagnostics for linear, generalized linear, and hierarchical models.

# Appendix D Interdisciplinary Certification Programs: Political Science

Table 7: Details on Interdisciplinary Methods Certification Programs

Program	Curriculum
<b>UC Santa Barbara</b> PhD Emphasis in Quantitative Methods in the Social Sciences (est. 1999)	<ul style="list-style-type: none"> <li>- 3 math courses (2 in calculus, 1 in linear algebra)</li> <li>- 1 year of statistics (can be satisfied with the required political science methods sequence)</li> <li>- 3 advanced methods courses (at least 2 outside the political science department)</li> <li>- 1 year of attending colloquium &amp; 1 colloquium presentation</li> <li>- Dissertation focused on advanced methods</li> </ul>
<b>University of Washington</b> Political Methodology Field (est. 1999)	<ul style="list-style-type: none"> <li>- 8 methods courses, 4 of which must be taken in other departments (1 course for MA students)</li> </ul>
<b>Ohio State University</b> Graduate Interdisciplinary Specialization in Survey Research (est. 2000)	<ul style="list-style-type: none"> <li>- 1 course in survey sampling</li> <li>- 1 survey research practicum course</li> <li>- 2 elective courses in survey research</li> </ul>
<b>University of Michigan</b> Certificate in Survey Methodology (est. 2001)	<ul style="list-style-type: none"> <li>- 3 courses in survey methods</li> <li>- 1 elective course in survey methods</li> </ul>
<b>Portland State University</b> Certificate in Applied Statistics (est. 2001)	<ul style="list-style-type: none"> <li>- 1 course in regression analysis</li> <li>- 2 courses in experimental design</li> <li>- 4 elective courses in statistics</li> <li>- 1 year of statistical consulting in a statistics lab</li> </ul>
<b>Duke University</b> Certificate in Advanced Quantitative Methods in the Social Sciences (est. 2003)	<ul style="list-style-type: none"> <li>- 1 course in statistics</li> <li>- 1 course in research design</li> <li>- 1 course in deductive modeling</li> <li>- 3 elective courses in advanced social science methods taken outside of the political science department</li> <li>- up to 4 “skills” courses (calculus, linear algebra, probability theory)</li> </ul>
<b>University of North Carolina-Chapel Hill</b> Certificate in Survey Methodology (est. 2003)	<ul style="list-style-type: none"> <li>- 1 course on survey computing</li> <li>- 1 course on survey sampling</li> <li>- 1 course on questionnaire design</li> <li>- 1 course on data collection</li> <li>- 1 course on case studies</li> <li>- 1 survey research practicum course</li> <li>- 1 elective course in survey methods</li> <li>- 1 two-day short course</li> </ul>
<b>Stanford University</b> Certificate in Social Science Methodology (est. 2006)	<ul style="list-style-type: none"> <li>- 1 course in research design</li> <li>- 1 course in data collection</li> <li>- 4 elective courses in advanced social science methods</li> <li>- 1 year of attending colloquium</li> <li>- 1 colloquium presentation</li> </ul>

Adapted from Aldrich, J. 2014. *Interdisciplinarity*. Oxford University Press: New York.

## Appendix E COLA Social Science Student Survey

At the beginning of the spring semester in 2016, we conducted a survey of graduate students in the social science departments in the College of Liberal Arts. This survey was intended to gauge interest among COLA social science graduate students in a program like what we are proposing here. The survey was open from January 4 to February 5. It was distributed to the relevant students by the graduate coordinators for Anthropology, Political Science, Psychology, and Sociology. In all, we had a total of 29 respondents to the survey. In this sample, 62% of respondents reported identifying as female, while just 31% identified as male. In terms of racial or ethnic identification, 73% of respondents identified as white, 11% identified as Hispanic, 8% identified as Asian, 8% identified as “Other.” The questions asked in the survey are presented in Table 8.

We asked students about the importance of methods training to their future career goals. We also asked them if they are interested in pursuing a methods certificate (or, for students already advanced to candidacy, whether they *would have* been interested in such a program if it was in place while they were still taking courses). The results of these questions can be found in Figure 1. In all, twenty of the twenty-nine respondents indicated that they were likely to pursue (or would have been likely to pursue) a methods certificate like this. The vast majority of all students thought that methods training was very important to their career plans, with only three students responding that such training was only somewhat or not at all important.

We also asked students to indicate how many methods courses they were already planning to take for their degree. Figure 2 shows the result of these questions. The results show that there is some significant variation in the number of methods courses graduate students are already planning to take. Only 14% are already planning to take enough methods courses to qualify for the certificate. The bulk of the doctoral and combined program students are planning to take at least three courses, but 21% of students pursuing doctoral degrees are currently planning to take only 1-2 methods courses for their degrees.

Perhaps one of the most compelling results of the survey was the student interest in having access to methods courses in different departments. We asked students how interested they were in accessing methods courses in other departments, and we also asked them to reflect on the level of interdisciplinarity of their own research. Almost all students considered their work at least somewhat interdisciplinary, and nearly all of them were either somewhat or very interested in taking methods courses in different departments. Given the current difficulty students have in taking methods courses across disciplines, this is a particularly strong indicator of the potential impact of the certificate program.

We consider these results to be preliminary, but they do indicate a good deal of interest among the social science graduate students in the College of Liberal Arts. Indeed, we have heard from a number of social science students outside of the College of Liberal Arts about

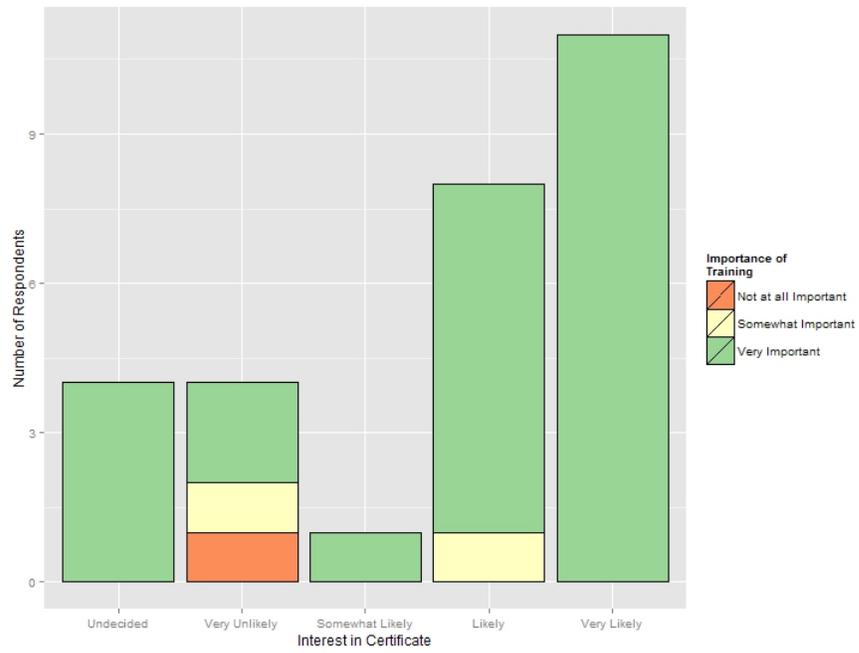


Figure 1: Interest in Methods Certificate by Importance of Methods Training

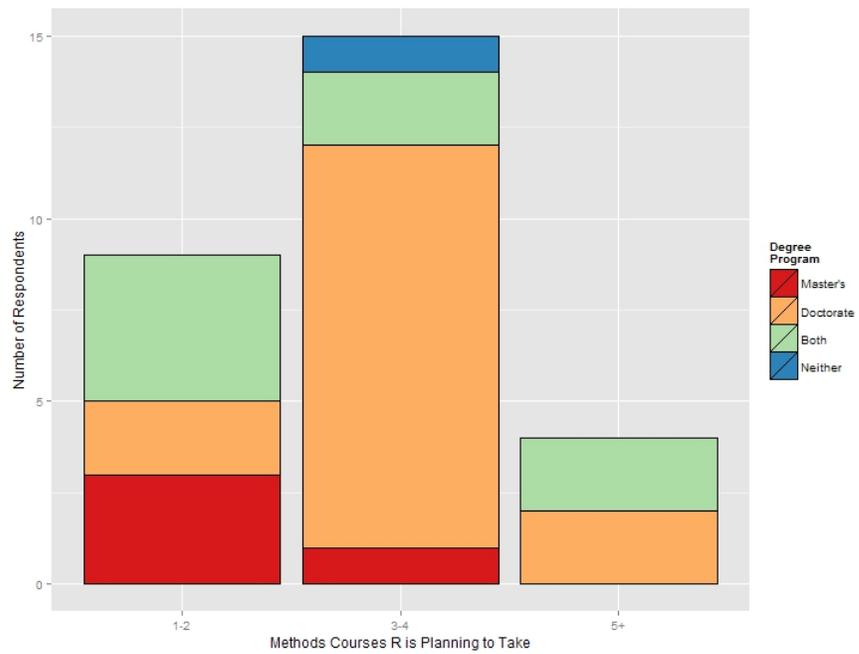


Figure 2: Students' Plans for Methods Courses

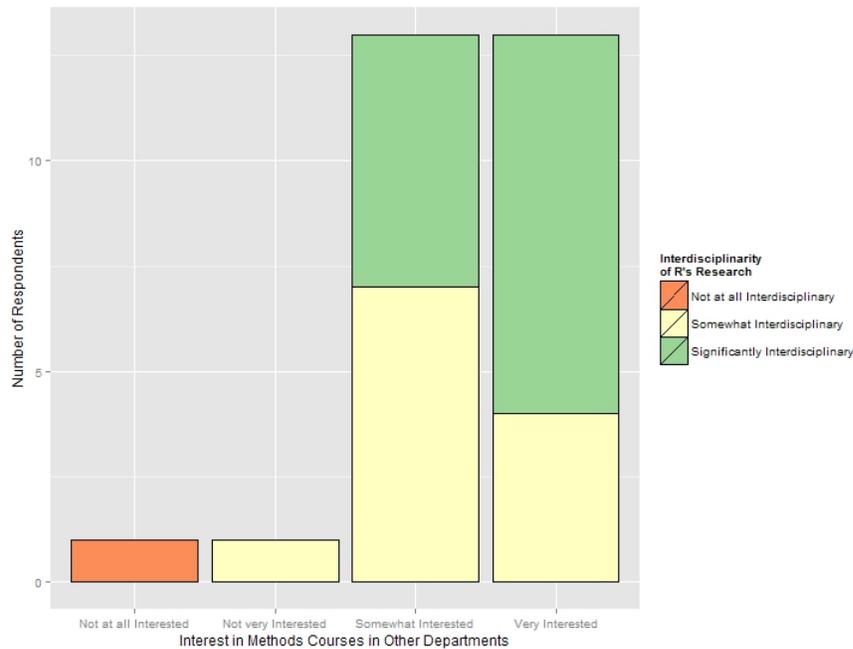


Figure 3: Interest in Cross-Department Courses by Interdisciplinarity

their very strong interest in the program. Indeed, it seems that many of the courses offered within the College are in high demand for students studying social science questions in departments outside the College. For this reason, we are optimistic about the potential for the certificate program to draw students from outside of the college from the outset.

Near the end of the survey, we also asked students for any other feedback they might have about methods training here at UNLV. Mostly, students used this opportunity to express their desire for more opportunities for methods training. One student made special note of how important such opportunities would be for students looking for post-graduate employment in state or local research agencies. Another student noted that such a program would provide a great community of students who are particularly interested in methods training. One student raised the important concern that a certificate program could slow progress to degree completion, which would put particular pressure on those students who have time-limited graduate assistantship funding. We agree with both the optimistic sentiment *and* the wise caution in regards to balancing the rigor of the program with the need to avoid bottlenecks and delays in pursuit of our progression and completion goals.

Table 8: Current Methods Requirements: College of Liberal Arts

The College of Liberal Arts and the Graduate College are collaborating on a proposal for a graduate certificate in Social Science Research Methods. The goal is to design a certificate program that will facilitate graduate students' ability to take advanced methods courses outside of their home departments while also providing a credential in Social Science Research Methods that would appear on students' transcripts. The following questions are designed to help gauge graduate students' demand and interest in such a certificate program. Thank you for your input.

Question Text	Response Anchors
How many methods courses do you plan to take during your graduate career?	<ul style="list-style-type: none"> <li><input type="radio"/> 0</li> <li><input type="radio"/> 1-2</li> <li><input type="radio"/> 3-4</li> <li><input type="radio"/> 5+</li> </ul>
How important will your research methods training be for your career after graduate school?	<ul style="list-style-type: none"> <li><input type="radio"/> Not at all Important</li> <li><input type="radio"/> Somewhat Unimportant</li> <li><input type="radio"/> Neither Important nor Unimportant</li> <li><input type="radio"/> Somewhat Important</li> <li><input type="radio"/> Very Important</li> </ul>
How interdisciplinary do you consider your research interests to be?	<ul style="list-style-type: none"> <li><input type="radio"/> Not at all Interdisciplinary</li> <li><input type="radio"/> Somewhat Interdisciplinary</li> <li><input type="radio"/> Significantly Interdisciplinary</li> </ul>
How interested are you in taking methods courses in other departments?	<ul style="list-style-type: none"> <li><input type="radio"/> Not at all Interested</li> <li><input type="radio"/> Not very Interested</li> <li><input type="radio"/> Neither Interested nor Uninterested</li> <li><input type="radio"/> Somewhat Interested</li> <li><input type="radio"/> Very Interested</li> </ul>
How interested are you in a program offering a Social Science Methods Certificate credential on your graduate transcript?	<ul style="list-style-type: none"> <li><input type="radio"/> Not at all Interested</li> <li><input type="radio"/> Not very Interested</li> <li><input type="radio"/> Neither Interested nor Uninterested</li> <li><input type="radio"/> Somewhat Interested</li> <li><input type="radio"/> Very Interested</li> </ul>
What kind of graduate degree are you currently pursuing?	<ul style="list-style-type: none"> <li><input type="radio"/> Master's Degree</li> <li><input type="radio"/> Doctorate Degree</li> <li><input type="radio"/> Both (Combined Degree Program)</li> <li><input type="radio"/> I am not planning to pursue a graduate degree</li> </ul>
[If MA] How far along in your Master's Degree Program are you?	<ul style="list-style-type: none"> <li><input type="radio"/> First Year</li> <li><input type="radio"/> Second Year</li> <li><input type="radio"/> Third Year or More</li> </ul>

Continued on next page

Table 8 – continued from previous page

Question Text	Response Anchors
[If Ph.D] How far along in your Doctoral Degree Program are you?	<ul style="list-style-type: none"> <li>○ First Year</li> <li>○ Second Year</li> <li>○ Third Year or More, Not Advanced to Candidacy</li> <li>○ Advanced to Candidacy</li> </ul>
[If Combined] How far along in your Combined Degree Program are you?	<ul style="list-style-type: none"> <li>○ First Year</li> <li>○ Second Year</li> <li>○ Third Year or More, Not Advanced to Candidacy</li> <li>○ Advanced to Candidacy</li> </ul>
[If year 1-2 in MA or not advanced to candidacy] How likely are you to consider pursuing a Social Science Methods Certificate credential?	<ul style="list-style-type: none"> <li>○ Very Unlikely</li> <li>○ Unlikely</li> <li>○ Undecided</li> <li>○ Likely</li> <li>○ Very Likely</li> </ul>
[If year 3+ in MA or advanced to candidacy] If a Social Science Methods Certificate credential were available when you started your program, how likely is it that you would have pursued this credential?	<ul style="list-style-type: none"> <li>○ Very Unlikely</li> <li>○ Unlikely</li> <li>○ Undecided</li> <li>○ Likely</li> <li>○ Very Likely</li> </ul>
What is your gender identity	<ul style="list-style-type: none"> <li>○ Male</li> <li>○ Female</li> <li>○ Other</li> </ul>
What is your racial/ethnic identity	<ul style="list-style-type: none"> <li><input type="checkbox"/> White/Caucasian</li> <li><input type="checkbox"/> African American</li> <li><input type="checkbox"/> Hispanic</li> <li><input type="checkbox"/> Asian</li> <li><input type="checkbox"/> Native American</li> <li><input type="checkbox"/> Pacific Islander</li> <li><input type="checkbox"/> Other</li> </ul>
Do you have any additional thoughts about your methods training or a possible methods certificate program?	