

**BU Social Science Methods Network
Inventory of Graduate Methods Courses**

School	Course number	Course title	Credits	Required or elective	Prereqs?	Brief description	PhD Programs
SED	RS 652	Qualitative Research Methods	4	Req.		Historical and theoretical bases, and techniques of qualitative research. Questions for which it is best suited; contrast with quantitative research. Ethical issues. Students critique published research, plan a study, gain entry; collect, analyze data; present findings.	Counseling Psychology; Curriculum & Teaching; Developmental Studies; Educational Leadership & Policy Studies; Special Education
SED	RS 653	Quantitative Research Methods	4	Req.	RS 600	Descriptive and inferential statistics most commonly used in educational research: t-test, ANOVA, multiple comparison, correlation, regression, and chi square. Emphasis on interpretation. Research project requires identifying a problem, gathering and analyzing data, and writing the results in APA format.	

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SED	RS 654	Educational Inquiry & Proposal Writing	4	Req.	RS 652 and RS 653	What is important and knowable about educational matters? Standards of believability, persuasiveness, and utility in different kinds of inquiry; relationships among theoretical, quantitative and qualitative methods in the cycle of scientific discovery. Emphasis on formulating significant research questions, clarifying important concepts for research, and preparing sound research proposals.	
SED	RS 750	Advanced Doctoral Seminar	4	Req.	RS 652 and RS 653 and RS 654	For doctoral students who have already clarified their research interests and are ready to work on their dissertation proposals. Provides direction on substantive and procedural issues in the design and conduct of research. Requires students to present drafts for critique in seminar format and to contribute to the constructive criticism of proposals of classmates. Includes pilot study.	

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SED	RS 751	Program Evaluation	4	Elec.	RS 652 and RS 653 or Consent of inst.	Alternative approaches to evaluation; consideration of stakeholders; specification of multiple outcomes; program monitoring; formative and summative designs; practical guidelines for planning, conducting, reporting, and using evaluations; role of the evaluator; necessary skills; political, ethical, and interpersonal aspects. Applicable to curricular interventions, training programs, social action projects, social policies. Case studies and student proposals are critiqued in seminar. Requires some pilot testing.	
SED	RS 752	Seminar in Qualitative Research	4	Elec.	RS 652	Designed for advanced doctoral students who are analyzing and/or interpreting qualitative data to work with other students under the direction of a faculty member. Students in the course will give presentations of their ongoing work, which will be subject to feedback over the entire semester.	

School	Course number	Course title	Credits	Required or elective	Prereqs?	Brief description	PhD Programs
CAS/GRS	MA 614	Statistical Methods II	4	Elec.	Consent of SED advisor	May substitute for RS 653. Second course in statistics, embodying basic statistical methods used in educational and social science research. Reviews all basic concepts covered in a first statistics course (e.g., CAS MA 613) and presents, in detail, more advanced topics such as analysis of variance, covariance, experimental design, correlation, regression, and selected nonparametric techniques. A problem-solving course; students carry out analysis of data taken from educational and other social science sources.	
CAS/GRS	SO 702	Proseminar in Methods	4	Req.	None	Research design, including qualitative and quantitative methods of data collection.	
CAS/GRS	SO 709	Field Research	4	Elec. (but meets qual. methods requirement)	None	Theory and procedures of field research (ethnography, interviews, etc.).	

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CAS/GRS	MA 614	Elementary Statistics	4	Req.		Preparation for next level—multivariate statistics.	
CAS/GRS	PO 841 or MA 684	Multivariate Statistics	4	Req,		(offered in other departments)	
CAS/GRS	AM 736	Literature of American Studies	4	Req.	None	Historiography of American Studies scholarship.	Ph.D. Program in American and New England Studies
CAS/GRS	AM 735	Studies in American Culture	4	Req.	AM 736	Research methods and research seminar in American Studies.	
CAS/GRS	AN 590	Theory, Method & Tech. in Fieldwork	4	Elec.	None	Traditional and modern methods of ethnographic field research: data collection, research design, and analyses.	Only one Ph.D in Anthropology , although it has somewhat different biological and social tracks.

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CAS/GRS	AN 595	Field Methods in Human Biology	4	Elec.	AN 102 or BI 107-108; AN 332 or AN 333; and MA 115; or Consent of inst.	Hands-on instruction in non-clinical techniques of comprehensive health assessment, including body composition, diet, energetics, health status, psychological stress, and reproductive status. Students design and execute their own research projects.	
CAS/GRS	AR 701	Intellectual Hist of AR	4	Req.	None	Intellectual history of AR.	Ph.D in Archaeology
CAS/GRS	AR 702	Contemp Theory in AR	4	Req.	None	Current theory.	
CAS/GRS	AR 505	Remote Sensing and AR	4	Elec.	2 AR courses	Technical skills course.	
CAS/GRS	AR 506	Regional AR & GIS	4	Elec.	2 AR courses	Technical skills course.	
CAS/GRS	AR 509	Geoarchaeology	4	Elec.	AR 101	Technical skills course.	
CAS/GRS	AR 512	Lab & Field Methods in Geoarchaeology	4	Elec.		Technical skills course.	
CAS/GRS	AR 515	Micromorphology	4	Elec.	AR 101 & AR 509	Technical skills course.	
CAS/GRS	AR 556	AR Field Research Experience	4	Elec.		Technical skills course.	

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CAS/GRS	AR 590	Life is a Bowl: Ceramics	4	Elec.		Technical/analytical course.	
CAS/GRS	AR 708	Site Formation Processes	4	Elec.		Technical skills course.	
CAS/GRS	AR 709	Research Methods in Geoarchaeology	4	Elec.		Technical skills course.	
CAS/GRS	AR 775	Oral History & Written Records in AR	4	Elec.		Technical/analytical course.	
CAS/GRS	AR 802	Paleoethnobotany	4	Elec.		Technical skills course.	
CAS/GRS	AR 803	Quantitative Analysis	4	Elec.		Technical skills course.	
CAS/GRS	AR 808	Survey & Landscape AR	4	Elec.		Technical/analytical course.	
CAS/GRS	CS 105	Intro to Databases and Data Mining	4		None	General introduction to databases for non-majors. Topics include database technology and data modeling; knowledge discovery and data mining; data visualization. Applications are drawn from a variety of disciplines.	

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CAS/GRS	CS 542	Machine Learning	4		CS 112; or equivalent programming experience, and familiarity with linear algebra, probability, and statistics.	Introduction to modern machine learning concepts, techniques, and algorithms. Topics include regression, kernels, support vector machines, feature selection, boosting, clustering, hidden Markov models, and Bayesian networks. Programming assignments emphasize taking theory into practice, through applications on real-world data sets.	
CAS/GRS	CS 562	Advanced Database Applications	4		CS 660 or CS 460	Research issues in the design and implementation of modern database systems. Spatial, temporal, and spatiotemporal index structures. Indexing methods for image and multimedia databases and data warehouses. New data analysis techniques for large databases, clustering and rule discovery for very large datasets.	

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CAS/GRS	CS 565	Data Mining	4		CS 112; or equivalent programming experience, and familiarity with linear algebra, probability, and statistics.	Introduction to data mining concepts and techniques. Topics include association and correlation discovery, classification and clustering of large datasets, outlier detection. Emphasis on the algorithmic aspects as well as the application of mining in real-world problems.	
CAS/GRS	CS 660	Intro to Databases	4		CS 112; or equivalent programming experience	Introduction to database management systems. Examines entity-relationship, relational, and object-oriented data models; commercial query languages: SQL, relational algebra, relational calculus, and QBE; file organization, indexing and hashing, query optimization, transaction processing, concurrency control and recovery, integrity, and security.	
CAS/GRS	EC 701	Adv Microeconomics I	4	Req.	EC 705	Basic theory of consumer behavior, general equilibrium.	MAPE PhD: 32 hours; PhD: 32 hours
CAS/GRS	EC 702	Adv Macroeconomics I	4	Req.	EC 701	Macro theory basics, growth.	

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CAS/GRS	EC 703	Adv Microeconomics II	4	Req.	EC 701	Game theory and information economics.	
CAS/GRS	EC 704	Adv Macroeconomics II	4	Req.	EC 702	Macro theory, part 2.	
CAS/GRS	EC 705	Mathematical Economics	4	Req.		Real analysis and related methods with emphasis on tools useful in economics.	
CAS/GRS	EC 707	Adv Stat for Economists	4	Req.	EC 705	Statistical tools including hypothesis testing, likelihood. Preparation for EC 708.	
CAS/GRS	EC 708	Adv Econometrics I	4	Req.	EC 707	Econometric theory. LS and ML estimators, GLS, IV estimators.	
CAS/GRS	EC 709	Adv Econometrics II	4	Req.	EC 708	Estimation and simulation of simultaneous equation models; selected topics.	
CAS/GRS	EC 711	Adv Topics in Econometrics	4	Elec.	EC 709	Recent developments in econometrics with emphasis on techniques for use with cross sectional data.	
CAS/GRS	EC 712	Time Series Econometrics	4	Elec.	EC 708	Standard theory of stationary stochastic processes, nonstationary processes; emphasis on techniques for use with time series data.	

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CAS/GRS	EC 716	Game Theory	4	Elec.	EC 705	Introduction to game theory with applications in economics.	
CAS/GRS	EC 717	Adv Topics in Micro Theory I	4	Elec.		Special topics; recently, has focused on contract theory.	
CAS/GRS	EC 718	Adv Topics in Micro Theory II	4	Elec.	EC 703	Special topics; recently, has focused on decision theory.	
CAS/GRS	GE 502	Field Measurements for Remote Sensing	4	Elec.	GE 501	Field measurements to support remote sensing activities; GPS field location and surveying techniques; simple forest mensuration.	Post-Masters Ph.D. in Geography and Environment; Post-Bachelors Ph.D. in Geography and Environment

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CAS/GRS	GE 505	Geographic Information Systems (GIS)	4	Elec.	GE 365 & MA 213, or Consent of inst.	Introduces the essentials in GIS, methods of data capture and sources of data, nature and characteristics of spatial data and objects, data structures, modeling surfaces, volumes and time, and data uncertainty.	
CAS/GRS	GE 516	Multivariate Analysis for Geographers	4	Req.	MA 124 or Consent of inst.	Applications of multivariate techniques to problems in spatial context.	
CAS/GRS	GE 550	Modeling Environmental and Social Systems	4	Elec.	GE 375 & EC 414, or Consent of inst.	Techniques of organizing energy, environmental, or social systems into mathematical computer models. Includes a hands-on research project in which students develop their own models.	
CAS/GRS	GE 650	Environmental Field Methods and Research	4	Elec.		Fundamental concepts and paradigms related to the application of scientific methods in the field. Developing and implementing independent environmental field research projects. Emphasis on the multidisciplinary nature of environmental research.	

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CAS/GRS	GE 700	Research Methods in Human-Environment Interactions	4	Elec.		Introduces qualitative methods used to study human-environment interactions. Stimulates critical thinking about the research process and the particular issues of human-environment relations: how we "know," matching methods and questions, ethical issues, and dissemination of results.	
CAS/GRS	GE 712	Regional Energy Modeling	4	Elec.	Consent of inst.	Regional energy modeling techniques and existing regional energy models. Modeling procedures are introduced. Current regional and energy models are explored.	
CAS/GRS	GE 805	Spatial Analysis Using GIS	4	Elec.	GE 505 & MA 614	Covers advanced research topics in GIS dealing with the measurement, storage, retrieval and analysis of spatial information. Topics include fuzzy sets, fractals, and spatial statistics. Completion of a project is required.	

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CAS/GRS	MA 684	Applied Multiple Regression and Multivariable Methods	4			Application of multivariate data analytic techniques.	PhD Mathematics and Statistics
CAS/GRS	MA 416	Analysis of Variance	4			Fundamental concepts and analytical skills in analysis of variance.	
CAS/GRS	MA 6xx	Statistics for the Social And Behavioral Sciences	4	Proposed new course	PO 841	Course builds on courses that cover elementary inference and regression.	
CAS/GRS	MA 685	Advanced Topics in Applied Statistical Analysis	4		MA 684	Canonical correlation, multivariate analysis of variance and regressions.	
CAS/GRS	PO 840	Political Analysis	4	Req	None	An introduction to the methodology of social science as applied to the study of politics. Includes discussion of core debates in philosophy of science, various approaches to political science, and questions of research design.	
CAS/GRS	PO 841	Quantitative Research Methods	4	Req.	None	Applied introduction to probability, descriptive statistics, hypothesis testing, and ordinary least squares regression analysis.	

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CAS/GRS	PO 843	Advanced Techniques in Political Analysis	4	Elec.	PO 841 or Consent of instr.	Applied course in quantitative empirical analysis using maximum-likelihood estimation. Topics include hypothesis testing in binary, multinomial, count and ordered response models.	
CAS/GRS	PS 528	Human Brain Mapping	4	Elec.	PS NE 202 PS 336 or Consent of instr.	Methods for non-invasively studying the human brain at work and what these methods have revealed about the brain structures and mechanisms that support cognition will be investigated.	Brain, Behavior & Cognition
CAS/GRS	PS 716	Psychology Research Methods	4	Req. for Developmental Science PhD students.	MA & PhD Students in Psychology or Consent of instr.	Theory and methodology focusing on measurement and design, interindividual, intraindividual, longitudinal analyses as well as the integration of different methodologies is examined. Discussion surrounds selection of appropriate methodologies for specific populations, the strengths and weaknesses of different methodologies as well as their assumptions and biases.	Clinical

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CAS/GRS	PS 790	Family Theory & Res	4	Elec.	MA & PhD Students in Psychology or Consent of inst.	This seminar covers major conceptual and methodological issues in the area of family psychology, with attention to issues of culture, violence, gender, and ethnicity. The major issues in family research design will also be examined.	Developmental Science
CAS/GRS	PS 978	Lab-Research Practicum	4	Req. for Clinical PhD students.	Clinical Doctoral students only	Review of contemporary research in selected areas. Issues of experimental design, execution, and data analysis are examined in the context of pursuing dissertation research.	
CAS/GRS	HI 800	European Historiography	4	Req.	None	Examines historical writing about Europe through changing trends in method and approach.	History PhD
CAS/GRS	HI 801	The Historian's Craft	4	Req.	None	Intensive training in the best practices of historical research, writing, publication, and oral presentation.	

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CAS/GRS	HI 850	American Historiography	4	Req.	None	Examines the methodological and professional development of American historians since the 1880s.	
CAS/GRS	HI 870	African Historiography	4	Req.	None	Examines historical writing about the African continent.	
CAS/GRS/SSW	SO 702	Proseminar in Research Methods	4	Req.	None	Graduate foundation course in the theory, principles and approaches of social science research methods.	Sociology and Social Work Doctoral Program (Note: New methods requirements voted in by Program on 03/08/12)
CAS/GRS/SSW	SR 906	Qualitative Data Analysis	4	Req.	Consent of inst.	History and theoretical traditions of the qualitative research; exposure to a range of data collection and analytical approaches; exploration of ethical issues in qualitative research.	

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CAS/GRS/SSW	MA 684	Applied Multiple Regression and Multivariable Methods	4	Req.	Prior grad foundation stats course	Multiple regression and correlation, confounding and interaction, variable selection, categorical predictors and outcomes, logistic regression, factor analysis, MANOVA, etc.	
CAS/GRS/SSW	choice	An Advanced Graduate- Level Research Methods Course	4	Req.		Selection determined by individual student's research interests.	
CAS/GRS/SSW	SR 904	Clinical Research Methods in Social Work Practice	4	Elec.	Consent of Inst.	The design, implementation and analytic strategies for quantitative research with clinical populations. A particular emphasis is on the conduct of intervention studies.	
SMG	SI 915	Causal Inference in Strategy Research	4	Req.	EC 709 or equivalent	Statistical and econometric methods for causal inference using observational data. Natural experiments, matching, instrumental variables, fixed effects and regression discontinuity.	PhD in Management

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SMG	OB 923	Field Studies Seminar	4	Req.	None	Explore the range of methodological practices and processes associated with conducting and composing high quality qualitative research.	PhD in Mathematical Finance