Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
Submit original form and 2 copies. Attach a course syllabus to each.

1. This request is submitted by the Department of ___Landscape Architecture and Urban Planning___

2. Course prefix, number and complete title ___URSC 641 Analytic Methods in Landscape and Urban Research___

3. Course description (not more than 50 words) To explicitly address many issues by offering graduate students who are focusing on research careers in urban and regional planning and landscape architecture with hands on experience in which issues related to theory, measurement, data, analysis are addressed in concert to answer relevant questions.

4. Prerequisite(s), doctoral standing or permission of instructor Cross-listed with ___

5. Is this a variable credit course? ☐ Yes ☑ No If yes, from ___ to ___.

6. Is this a repeatable course? ☐ Yes ☑ No If yes, this course may be taken ___ times. Will the course be repeated within the same semester/term? ☐ Yes ☑ No

7. Has this course been taught as a 489/689? ☐ Yes ☑ No If yes, how many times? ___ 2 Indicate the number of students enrolled for each academic period it was taught. 5-06(S10-07)

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
   PhD in Urban and Regional Sciences
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix Course # Title (exclude punctuation) ___

   URSC 641 ANALYTIC METHODS I

   Lect. Lab SCH Subject Matter Content Code Admin. Unit Acad. Year FICE Code
   0 3 0 0 0 3 0 4 0 0 1 0 1 0 0 3 6 3 2

   Approval recommended by: ___

   Head of Department Date 5-7-08

   Head of Department (if cross-listed course) Date 9/4/08

   Submitted to Coordinating Board by: ___

   Director of Academic Support Services Date

   Dean of College Date

   Dean of College Date

To have this form reviewed, please send to Linda F. Lacey, Mail Stop 1265 or fax to 847-8737.
OAR/AS-5/04

1 of 9 B12
URSC 641: Analytic Methods in Landscape and Urban Research I

Course Description: Explicitly address linking theory, measurement, data set development and data analysis issues critical for conducting research in urban and regional planning and landscape architecture.
URSC 641:
Analytic Methods in Landscape and Urban Research I

Dr. Walter Gillis Peacock
Office: C106B Langford Architecture Center
Office Hours: T-TH 1300 – 1400 or by appointment
Classroom: A348
Class hours: T-Th 1110 - 1225
Tutorial: Fridays, time to be announced
Phone: 979-845-7813
Email: peacock@tamu.edu

Introduction: The successful researcher in urban planning and landscape architecture is required to fully integration of theory, data, measurement and analysis in a coherent fashion in order to, more often than not, test theoretically derived hypotheses. Unfortunately, the pedagogical pathways for acquiring and mastering these elements are often diverse, disparate, and divergent. Theory courses discuss theory, methods course discuss data collection and maybe some analysis, statistics course discuss statistical methods. It is rare to find a course that addresses measurement issues in more than a cursory fashion. A research methods course will touch on these topics but will rarely discuss the actual operational procedures in sparse and rich data environments. It is even more uncommon to find courses that discuss data set creation, cleaning, and manipulation. One may learn fairly simple examples of data manipulation in some of their courses, however it is unusual to learn procedures to facilitate complex data manipulations to create variables that will be employed in their research. Indeed it is often the case that many research situations will require the creation of complex data sets consisting of data from multiple sources (i.e., tax-appraisal data, census data, environmental quality data and survey data). Linking these potentially complex data sets together and creating new variables out of existing data all require expertise that is rarely discussed in classes. Furthermore, undertaking analysis utilizing these integrated complex data sets can demand special considerations.

The purpose of this two-part course sequence, Urban and Regional Analysis I and II (URAI and URAII), is to explicitly address many of the above issues, as well as others, by offering graduate student who are focusing on research careers in urban and regional planning and landscape architecture with hands on experiences in which issues related to theory, measurement, data, and analysis are addressed in concert to answer research relevant questions. The specific goals of this course sequence are as follows:

To explore the wealth of quantitative and mathematical approaches utilized by researchers to analyze their data. These topics will range from fairly simple approaches for describing data and making inferences, to much more complex approaches allowing for one to consider multiple relationships, causality and
functional forms. We will explore all forms of bivariate and multivariate approaches with both quantitative and qualitative measures.

To explore the variety of data that one is likely to employ in urban and regional planning research with an emphasis on data manipulation, merging, and restructuring. Additional data topics will include: survey data, secondary data, combining data, weighting data, census data (block, block-group, tracks, TAZ, etc.), PUMS data (Census), Economic data (ESA, BLS, BEA, local tax-folio data); problems and issues with aggregate data, multi-level data, etc.

To explore a host of measurement issues, with an emphasis how researchers tackle the problem of operationalization, with real data, in urban and regional planning research. Additional measurement issues will include: levels of measurement, scale and index construction, tools and methods for establishing validity and reliability actor analytic approaches, information theoretic approaches for measuring inequality.

To explore using statistical packages to manipulate and analyze data. Our focus will be SPSS, the Statistical Package for the Social Sciences. There are a variety of packages we could employ. SPSS, however, is the most often utilized, particularly for learning how to use analyze and manipulate data, however it does lack some flexibility and utility when we get into more exoteric techniques. So we will explore the use of other packages, particularly in URAII. Nevertheless, SPSS does provide us with a good platform and, most importantly, it does provide us with the ability to explore employing menus and syntax (programming language) to perform more complex data manipulations.

The goal for Urban and Regional Analysis I (URA_I) is to lay a firm foundation upon which to build an understanding of more complex data set development and analysis strategies that are critical for the successful researcher in urban and regional planning. We will take things somewhat slowly, but build up momentum as we move along. Please do not get behind in the readings or in the homework.

**Course Prerequisite:** Doctoral standing or Permission of instructor

**Subject Matter:** Although the course material necessarily requires some familiarity with arithmetic, basic algebra, and logic, I will try my best not to over emphasize its mathematical content. I will at times present mathematical element in the hopes of providing those comfortable with this approach some insight; however, this approach will not be a central emphasis of the course. I will strive to provide students with a more substantive, intuitive understanding to why one must do the things we do in research. So if you feel weak in mathematics you should not be intimidated by this course. We will concentrate on using standard approaches and computational software to help make meaningful "order" out of the initial "chaos" represented by data often utilized by researchers in urban and regional planning.
**Course Organization:** Class periods will be devoted to lecture and using the computer to get output. The lecture material will follow its own course, predominantly in PowerPoint presentation, which will draw upon required materials from the assigned books and supplemental readings. During the latter part of the class period, on selected days, we will discuss your homework assignments. I personally think that working with data and data analysis, much like other enjoyable activities, should be practiced more than once a week. Therefore, I would like to suggest the class attempt to create a study session during the week. I will gladly attend if it is on a day I can be there. I also request that you be to class ON TIME! Since we will be using the computers for power point lectures and data examples, it will be easier if you power them up, log on, get into SPSS, bring up the lectures, and be prepared to begin when the class is scheduled to start.

**TEXTS:** Unfortunately there is not a single text that I can assign in this course, which will cover many of the issues that will be covered in this course. Therefore, all text are in some sense supplemental, and yet some required. I will however have two required texts and a number of supplemental readings from which I will draw materials for my lectures, and from whence homework assignments will be drawn.

**Required:**


**Supplemental Texts and materials:** The following are some supplemental books that will be particularly useful and I will make reference to in my lectures. In addition there will be multiple articles and sources that I will suggest throughout the lectures. Students are encouraged to read these materials. The following some examples:


**Software:** We will, as mentioned above, be using SPSS. This package is available in all labs through the Langford Architecture center and is available from SELL for $30.

**GRADING:** Your grade in this course is based on two exams and a number of homework assignments. The tests will count 35% each for a total of 70% of your final grade. Homework assignments will count, again taken as a whole, for 30% of your grade.

**EXAMS:** Exams **will not be open book/notes**, however, you may bring in one 8.5” by 11” sheet of paper with as much information as you can fit on it. DO NOT make the mistake of thinking that this means they are easy. My exams are long and will require you to do a considerable number of computer operations, thinking and writing. If you have not kept up with the lectures, reading and homework assignments you will not do well on the exams. The content of the exam will depend upon the materials we have covered by the exam and I will make this clear prior to the exam day.

**HOMEWORK:** I will assign problems from the GDA book, most will be problems with answers provided in the back, or I may give you an assignment I have made up myself. You simply have to do them and hand them in on time. Each assignment is due on the day specified during the class period. You will lose 10% for everyday it is late and that includes non-class days and weekends. You may (in fact should) work together on homework assignments, but for your own sake, do not simply copy someone else’s homework. Actually doing the homework will provide you with valuable practice for the test. The purpose of homework is to provide you with feedback about what you do not understand. If you are not getting something when you are doing your homework, ask about it in class! Do not wait for me to return your homework to ask questions.

Here are some tentative dates for exams and chapters covered:
Mid-Term Exam: Week 7.
Final Exam Day: Friday, December 8th 3-5 pm.

Course Outline: the following is the course outline and schedule for URA_I along with required readings. Given the flow of the course, we may have to make modifications to the schedule. I reserve the right to do so, but will always discuss changes with the class and keep you informed of these modifications.

Week 1, (August 28-Sept. 1): Introduction and discussion of key concepts in the Research process (Theory, Research, Measurement and Data.)

Week 2 (Sept 4–Sept 8): Introduction to SPSS, working with Data and procedures for describing your data (frequency distributions and simple graphs).
Readings: GDA, Chapters 1-4. SPC, Chapter 2 – 4.

Week 3 (Sept 11–Sept 15): Simple data manipulations, using syntax, and more procedures for describing your data (central tendency and dispersion).
Readings: SPC, Chapter 5 and 6; GDA, Chapters 5 and Appendix B, pages 597; and CSR.

Week 4 (Sept. 18–Sept. 22): An introduction to US Census data (blocks, block-groups, tracks, and PUMS) and comparing groups, a closer look at distributions and plots.
Readings: GDA, Chapters, 6 – 9.

Week 5 (Sept 25–Sept. 29): Using samples to make population inferences, hypothesis testing and confidence intervals.
Readings: GDA, Chapters 10 and 11; SPC, Chapter 7

Week 6 (Oct. 2–Oct. 6): Operationalization, part I (simple additive scales) and testing for differences between groups.
Readings: GDA, Chapters 13 and 14.

Week 7 (Oct. 9–Oct. 13): Mid-Term

Week 8 (Oct. 16–Oct. 20) Linking and merging data sets (survey data with spatial and census data) and testing for differences among multiple groups.
Readings: SPC, Chapter 9; GDA, Chapter 15.

Week 9 (Oct. 23–Oct. 27): Reconsidering cross-tabulations and measures of association with categorical data.
Readings: SPC, Chapter 10; GDA, Chapters 17 and 19.

Week 10 (Oct. 30–Nov. 3): Operationalization, part II: reliability and validity
Readings: SPC, Chapter 11 and 18

Week 11 (Nov. 13–Nov. 17): Assessing causal, predictive, and deterministic relationships in non-experimental research settings.
Readings: SPC, Chapter 12; GDA, Chapter 20.

Week 12 (Nov. 20–Nov 24): Multiple regression and hypothesis testing.
Readings: GDA, Chapter 21.

Week 13 (Nov. 27–Dec. 1): Explanation versus prediction: Why are we doing what we are doing and a critical assessment of the goals of empirical analysis.
Readings: SPC, Chapter 13; GDA Chapter 23.

Week 14: (Dec. 5) Catch-up day

Important dates:
Last day to drop with no record: September 1st
Last day to drop with no penalty (Q-drop) November 3th.
Last day of regular class: December 5th.
Final Exam date: December 8th 3-5 pm

ADA Policy Statement: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities in Cain Hall room B118, call (979) 845-1637, ATS (979) 845-0390, or disability@tamu.edu.
Plan 689: Student Questionnaire and Aggie Honor Code Statement:

Name: ___________________________________________ (please print clearly).
Local Phone or Cell Number: ________________________________.

Email Address: __________________________________________________ (please print clearly!!)

Undergraduate Major(s): ____________________________________________
________________________________________________________________

Undergraduate Minor(s): ____________________________________________
________________________________________________________________

Graduate degree(s):   ______________________________________________
________________________________________________________________

If you have had any research methods courses please give the course number, title and brief description:
______________________________________________
________________________________________________________________
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If you have had any statistic courses please give me the course number, title and brief description:
______________________________________________
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Academic Integrity Syllabus Statement:
“An Aggie does not lie, cheat or steal or tolerate those who do.”
Please familiarize yourself with the Aggie Honor Code and the Honor Council Rules and Procedures that can be found at: www.tamu.edu/aggiehonor.
Please read the following and signify your agreement by your signature:
“On my honor as an Aggie, I will follow the Aggie honor code in all things I do related to this class.”

__________________________________________
Your signature