School of Economic, Political and Policy Sciences

Certificate Programs

The School of Economic, Political and Policy Sciences offers eight graduate certificate programs for both degree and non-degree seeking students. Certificate programs are a valuable component of the School's educational mission and can be an important resource for both mid-career professionals and others seeking to advance their knowledge and expertise. The Certificates are offered in: City Planning, Economic and Demographic Data Analysis, Evaluation Research, Geographic Information Systems (GIS), Local Government Management, Nonprofit Management, and Remote Sensing.

Graduate Certificate in City Planning: 15 hours

The Graduate Certificate in City Planning is a 15 credit hour Master's level certificate. The 15 hours earned in the Certificate program will count toward the Master of Public Affairs (MPA) degree if the student decides to pursue the MPA. The academic focus of the proposed certificate is the basic elements of the body of knowledge of the field of city planning. These elements include the theory and legal elements of planning, developing and implementing plans, land use management, land use law and regulation, and functional topics such as transportation and housing.

The Dallas-Fort Worth Metroplex is the fourth largest metropolitan area in the United States. The scope and growth of this urban area create many demands for professionals whose role is to plan for and manage this urban complex. The U.S. Bureau of Labor Statistics (BLS) expects the profession of city planning to grow by between 9%-14% by the year 2014. The BLS further notes that, "Most new jobs for urban and regional planners will be in local government, as planners will be needed to address an array of problems associated with population growth, especially in affluent, rapidly expanding communities. For example, new housing developments require roads, sewer systems, fire stations, schools, libraries and recreation facilities that must be planned for in the midst of a consideration of budgetary constraints."

The Certificate is intended for professionals already working in city planning in the public sector, those employed in private for-profit or governmental settings who work with planning and development projects, and students without professional experience who seek to prepare themselves for careers in city planning or local government.

The 15 hours of course offerings noted below incorporate the essential knowledge base of city planning. Students may petition the program coordinator to include other graduate courses offered by the School of Economic, Political and Policy Sciences as guided electives; however, courses from other institutions may not be applied to the required 15 semester credit hours.

**PA 6324** Community Planning
PA 6330 Basics of Land Development
PA 6327 Land Use Law and Ethics
PA 6354 Transportation Planning
GISC 6381 Geographic Information Systems Fundamentals
   or SOC 6341 Urban Economics
   or PA 6342 Local Economic Development

Graduate Certificate in Economic and Demographic Data Analysis: 15 hours

The Certificate in Economic and Demographic Data Analysis may be acquired by graduate degree-seeking and non-degree seeking students. For the certificate, students must complete 15 graduate hours (5 courses).

Students are required to take:

   EPPS 7313 Descriptive and Inferential Statistics
   EPPS 7316 Regression and Multivariate Analysis

Students must choose at least one of the following courses:

   ECON 6306 Applied Econometrics
      or EPPS 7318 Structural Equation and Multilevel (Hierarchical) Modeling
      or EPPS 7344 Categorical and Limited Dependent Variables

In addition, two other empirically oriented courses must be completed. Students should check with the Director of the Certificate Program or the program office for details as to the list of acceptable courses.

Students seeking the certificate who do not plan to seek a degree should (1) submit an application and (2) an undergraduate transcript. No GRE score is required. Note: (a) up to 15 hours of coursework taken as a non-degree seeking student can be applied later to a graduate degree; (b) currently enrolled students may use up to 9 hours of courses required for their degree for the certificate. Non-degree seeking students interested in continuing their graduate education must formally apply to the University and their program of interest to be considered for admission.

Graduate Certificate in Evaluation Research: 15 hours

A graduate-level certificate program in Evaluation Research is offered jointly by the Schools of Economic, Political and Policy Sciences and Behavioral and Brain Sciences. Students who complete this program will have an opportunity to gain competencies in the design and implementation of
program evaluations in fields such as education, health care, human services, criminal justice, and economic development. The Certificate in Evaluation Research program may be incorporated into graduate degree programs in the Schools of Economic, Political and Policy Sciences or Behavioral and Brain Sciences, or may be taken on its own by non-degree seeking students. Students in the Evaluation Research certificate program are normally expected to have completed undergraduate courses in social statistics and research design; students lacking appropriate preparation may be asked to take needed courses prior to admission to the program.

In order to receive the certificate, students must successfully complete three required courses and a two-semester long evaluation research project that culminates in a final report. The courses for a total of 15 semester credit hours in the School of Economic, Political and Policy Sciences leading to the Certificate in Evaluation Research are:

- **EPPS 7313** Descriptive and Inferential Statistics
- **EPPS 6352** Evaluation Research Methods in the Economic, Political and Policy Sciences
- An elective course approved by the Evaluation Research certificate program coordinator
- **POEC 6V91** Evaluation Research (six credit hours)

With permission of the Evaluation Research program coordinator, students may substitute appropriate courses from the School of Behavioral and Brain Sciences or prior coursework taken at other institutions. This is discussed in the Behavioral and Brain Sciences section of the catalog.

Students interested in applying for admission to the Certificate in Evaluation Research program should consult the graduate advising office in the School of Economic, Political and Policy Sciences or the School of Behavioral and Brain Sciences.

### Graduate Certificate in Geographic Information Systems (GIS): 15 hours

The School of Economic, Political and Policy Sciences offers a certificate in Geographic Information Systems for both novice and experienced GIScience professionals. The certificate is available to both graduate degree-seeking and non-degree seeking students. The certificate requires 15 graduate hours (5 classes).

Students seeking the GIS certificate must have completed an undergraduate degree in some area relevant to GIS. Primary admissions requirements are: (1) an application to UT Dallas, and (2) an undergraduate transcript. Applicants for the certificate program do not need a GRE (Graduate Record Examination) score. They should apply as "non-degree-seeking" students to the Geospatial Information Sciences program. Admissions requirements are the same for students who would simply like to take one or more of the related courses without pursuing certification.

The Graduate Certificate in Geographic Information Science requires the following three courses. Students must earn an average grade point average (GPA) of 3.0 across these classes.

- **GISC 6381** Geographic Information Systems Fundamentals
GISC 6382 Applied Geographic Information Systems
GISC 6387 Geographic Information Systems Workshop

In addition, students must take two courses from the following list:

GISC 6301 GIS Data Analysis Fundamentals
GISC 6317 Computer Programming for GIS
GISC 6325 (GEOS 5325) Remote Sensing Fundamentals
GISC 6383 Geographic Information Systems Management and Implementation
GISC 6384 Spatial Analysis and Modeling
GISC 6388 GIS Application Software Development
GISC 7310 Regression Analysis with GIS Applications
GISC 7360 GIS Pattern Analysis
GISC 7361 Spatial Statistics
GISC 7363 Internet Mapping and Information Processing
GISC 7365 (GEOS 5326) Remote Sensing Digital Image Processing
GISC 7366 Applied Remote Sensing
GEOS 5322 GPS (Global Positioning System) Satellite Surveying Techniques
GEOS 5324 3D Data Capture and Ground Lidar

Other courses in Geosciences, Computer Science, Management, or Economic, Political and Policy Sciences may be applied to the certificate at the discretion of the Director of the Certificate Program. All courses applied to the Certificate must have been taken within the three year period prior to the award of the Certificate. No more than two courses can be transferred from another institution.

Graduate Certificate in Geospatial Intelligence (GeoInt):
15 hours

Geospatial Intelligence (GEOINT) is a rapidly evolving field that demands certain technical skill sets, the ability for individual rapid critical thinking and a global awareness of supporting information for national security and other intelligence activities. This certificate program produces graduates that have met the requirements for such professionals set forth by the United States Geospatial Intelligence Foundation (USGIF).

Classes are offered through the state of the art facilities housed within the Geospatial Information Sciences program in the school of Economic, Political and Policy Sciences. The certification requires 15 graduate hours (5 classes) detailed below. All courses taken as part of this certificate also count toward the Master of Science in Geospatial Information Sciences degree, and can be taken in
conjunction with the Graduate Certificate in Geographic Information Systems and the Graduate Certificate in Remote Sensing.

Mission

The mission of the Graduate Certificate in Geospatial Intelligence is to provide students with a broad set of skills in the areas of geographic information systems, remote sensing, geospatial statistical analysis, intelligence gathering and global positioning systems. Courses will emphasize these skills along with the ability to find and interpret data, conduct accurate analysis, work in a professional and collaborative environment and communicate effectively. UT Dallas geospatial intelligence certificate graduates will have demonstrated to the intelligence community that they have acquired the basic skills needed for employment in this high growth industry.

Admission Requirements

Students seeking the Geospatial Intelligence certificate must have completed an undergraduate degree and should apply to the graduate school as "non-degree seeking" students. Admissions paperwork requires only:

- an application to UT Dallas Graduate School
- an undergraduate transcript
- a narrative/personal statement, approximately one page in length, outlining the applicant's background, educational, and professional objectives

You may complete and submit an application for admission online. You should apply as a "non-degree" student to the MGIS program. You do not need a GRE (graduate record examination) score or letters of reference for admission to the certification program.

Although applicants are not required to submit GRE scores, TOEFL scores (for International Students), or 3 letters of recommendation, but doing so will strengthen their chances of being accepted. Competence in microcomputer use and familiarity with MS Windows and file management (directories, copying, etc.) is expected. Up to 15 hours of course work taken in the certificate program can be applied later to a graduate degree should you desire to pursue such a degree.

Registration by Current UT Dallas Students

Graduate students in any degree program within UT Dallas may register for GISC courses using standard registration procedures. Undergraduate students eligible for the Fast Track program may also enroll. See your program adviser regarding degree-plan credit assignment. Courses are listed under geospatial information sciences (GISC) in the UT Dallas Class Schedule, with additional offerings under Geosciences (GEOS) and Political Economy (POEC).

Required Courses

Five courses are required to earn the certificate:
GISC 6301 GIS Data Analysis Fundamentals
GISC 6381 Geographic Information Systems Fundamentals
GISC 7365 Remote Sensing Digital Image Processing
GISC 6387 Geographic Information Systems Workshop

One Topics (elective) Course chosen from the following, or as approved by the geospatial intelligence certificate director:

School of Economic, Political and Policy Sciences

GISC 7310 Regression Analysis with GIS Applications
GISC 6317 Computer Programming for GIS
GISC 6325 Remote Sensing Fundamentals
GISC 6383 Geographic Information Systems Management and Implementation
GISC 6384 Spatial Analysis and Modeling
GISC 6385 GIS Theories, Models and Issues
GISC 6388 GIS Application Software Development
GISC 6388 GIS Application Development
GISC 7360 GIS Pattern Analysis
GISC 7361 Spatial Statistics
GISC 7363 Internet Mapping and Information Processing
GISC 7366 Applied Remote Sensing
GISC 7387 GIS Research Design

School of Natural Sciences and Mathematics (Geosciences courses)

GEOS 5322 GPS (Global Positioning System) Satellite Surveying Techniques
GEOS 5324 3D Data Capture and Ground Lidar
GEOS 5325 Introduction to Remote Sensing
GEOS 5329 Applied Remote Sensing
GEOS 5326 Remote Sensing Digital Image Processing

Naveen Jindal School of Management (MIS courses)

MIS 6326 Database Management
MIS 6308 Systems Analysis and Project Management
MIS 6324 Business Intelligence Software and Techniques
MIS 6360 Software Project Management

Individuals experienced with GIS may have the introductory course (GISC 6381) waived at the discretion of the Certificate Director, but must take an additional course from the topics courses listed above. No more than two courses may be transferred from another institution. Courses for the Certificate must be completed within a 3-year period with a minimum cumulative GPA of 3.0.

Graduate Certificate in Local Government Management: 15 hours

The School of Economic, Political and Policy Sciences offers a Graduate Certificate in Local Government Management for local government professionals and for MPA students who desire to broaden their knowledge of important issues and approaches employed by professional local public administrators. Local governments in the United States play an important role in our democratic system. They are the place in our democratic system where citizens have the most direct contact with elected and appointed officials on numerous issues.

Local government managers operate in a complex legal and political environment. They are responsible for the provision of varied services directly to citizens, such as land use planning, law enforcement, water and sewer services, and recreation. Both the method and quality of service delivery are greatly influenced by managers who are hired by elected officials. The management of cities and counties has become increasingly professional over the past several decades. How the professional staff delivers services to the public within the political environment in which it works is the topic of many of the courses in this program.

Requirements for admission to the certificate program are the same as for a non-degree seeking graduate student. Completion of fifteen (15) semester credit hours is required to attain the Graduate Certificate in Local Government Management and those hours may count toward a degree if the student completes all requirements for full admission as a graduate student. Required courses in the certificate program are:

- **PA 6345** Human Resources Management
- **PA 6321** Government Financial Management and Budgeting
- **PA 6344** State/Local Government Management

The other two courses may be selected from among courses that pertain to local government offered in the graduate programs of the School of Economic, Political and Policy Sciences. Permission of the certificate coordinator must be obtained for the two elective courses.

Graduate Certificate in Nonprofit Management: 15 hours

Nonprofit organizations constitute an increasingly significant sector of the American economy as well as an essential element in American civic life. Nonprofits are found in such diverse fields as health care, education, human services, and criminal justice, as well as in cultural and civic
activities. Faced with resource constraints and rising demands for accountability, nonprofit organizations require professional managers with an understanding of both administrative principles and techniques and of the distinctive legal, economic, and social environment within which nonprofits operate.

The Certificate in Nonprofit Management is designed to provide an overview of the nature and context of nonprofit organizations combined with skill-based courses to develop the competencies needed by nonprofit managers. The Certificate is intended for professionals already working in the nonprofit sector, those working in private for-profit or governmental settings who would like to work or volunteer in the nonprofit sector, and students without professional experience who seek to prepare themselves for nonprofit careers.

Completion of fifteen (15) semester credit hours are required to attain the Certificate in Nonprofit Management. Requirements include three core courses and two guided electives from the list below. Students may petition the program coordinator to include other graduate courses offered by the School of Economic, Political and Policy Sciences as guided electives. Courses from other institutions may not be applied to the required fifteen semester credit hours.

Certificate Core Courses: 9 hours

- **PA 6316** Leadership in Public and Nonprofit Organizations
- **PA 6380** Nonprofit Organizations
- **PA 6382** Nonprofit Management

Certificate Guided Electives: 6 hours from the following

- **PA 6311** Public Management
- **PA 6321** Government Financial Management and Budgeting
- **PA 6335** Resource Development for Nonprofit Organizations
- **PA 6374** Financial Management for Nonprofit Organizations

Graduate Certificate in Remote Sensing: 15 hours

The Remote Sensing Certificate is administered jointly by the School of Economic, Political and Policy Sciences and the Department of Geosciences. The American Society for Photogrammetry and Remote Sensing (1997) defines remote sensing as the art, science, and technology of obtaining reliable information about physical objects and the environment through the process of recording, measuring and interpreting imagery and digital representations of energy patterns derived from non-contact sensor systems. Remote sensing involves a powerful set of computerized software and hardware, and sophisticated mathematical, statistical and logical techniques for extraction and presentation of information acquired via non-contact sensors. It provides reliable and cost-effective means of studying the Earth's surface for urban planning, natural resources management and protection, and a wide variety of other fields. Government and non-government organizations
continuously seek qualified professionals to use remote sensing for a wide range of applications.

Students seeking the Remote Sensing Certificate must have completed an undergraduate degree in some relevant area. Primary admissions requirements are: (1) an application to UT Dallas, and (2) an undergraduate transcript. Applicants for the certificate program do not need a GRE (Graduate Record Examination) score. They should apply as “non-degree seeking” students to the Geospatial Information Sciences program. Admissions requirements are the same for students who would simply like to take one or more of the related courses without pursuing certification.

The Graduate Certificate in Remote Sensing requires 15 credits earned through the following courses:

- **GISC 6325 (GEOS 5325)** Remote Sensing Fundamentals
- **GISC 6381** Geographic Information Systems Fundamentals
- **GISC 7365 (GEOS 5326)** Remote Sensing Digital Image Processing
- **GISC 7366** Applied Remote Sensing
- **GISC 7367 (GEOS 7327)** Remote Sensing Workshop

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