

# Geographic Information Systems Certificate

Division of Engineering Technologies and Computer Sciences – Curriculum Code : 3206

Will Earn Upon Program Completion: Certificate in Geographic Information Systems

## **Why major in Geographic Information Systems?**

This program prepares a person for entry level positions in the field of geographic information systems. A geographic information system (GIS) is an integrated database management system used to store, organize, retrieve, and analyze geographical and resource data for decision making. The curriculum includes computer-assisted drafting, map making, database management, surveying, and applications of geographical information systems.

GIS technicians work under the supervision of GIS engineers, managers, cartographers, surveyors, and other professionals. The need for technicians in this area continues to grow with the rapid development and implementation of GIS technology.

This program enables the student to test and obtain a National GIS Industry Certification, more commonly known as a STARS Certification -- "Spatial Technology and Remote Sensing (STARS)"-- through an ECC partner.

## **Are there any requirements I must satisfy before I start taking courses in my major?**

Based on your placement test scores, you may have to take developmental courses in reading, English, and/or mathematics before taking courses in your major.

## **How long will it take me to complete this certificate?**

If you do not need developmental courses and you register for an average of 15 credits each semester, you can complete the degree in ten months.

## **Where should I direct specific questions about this program?**

Contact the Academic Affairs Office at (973) 877-3498.

## **Upon completion of this program, graduates will be able to:**

- ◆ Demonstrate an understanding of geographic information systems and how they can be used to manage and analyze spatial information;
- ◆ Demonstrate an understanding of the principle of remote sensing and image processing;
- ◆ Explore geospatial technology's role in social, behavioral, life, and physical sciences;
- ◆ Apply critical thinking and communications skills through problem-solving projects;
- ◆ Demonstrate proficiency in GIS concepts, software, data, and application in preparation for STARS GIS Certification Examination.

## Geographic Information Systems Certificate Program

<p><b>GENERAL EDUCATION REQUIREMENTS: (6 credits)</b></p> <p><b>Communications (3 credits)</b> ENG 101 College Composition I 3</p> <p><b>Mathematics (3 credits)</b> MTH 101 Statistics and Probability 3</p> <p><b>MAJOR COURSE REQUIREMENTS: (21 credits)</b></p> <p>Cartography/Computer Map Reading 3 GIS 111 Fundamentals of GIS 4 GIS 201 Intro. to Spatial Analysis 4 GIS 211 Advanced Applications in GIS 4 GIS 298 GIS Technology Projects 3 GIS 299 GIS Internship 3</p> <p><b>ADDITIONAL COURSE REQUIREMENTS: Select one from the following (3 credits)</b></p> <p>GIS 220 GIS in Homeland Security or GIS 221 GIS in Law Enforcement or GIS 222 GIS in Economic Development 3</p> <p><b>Total Credits Required for Certificate 30</b></p>	<p><b><u>FULL TIME/Day - First Semester</u></b></p> <p>GIS 101 Cartography/Computer Map Reading 3 GIS 111 Fundamentals of GIS 4 ENG 101 College Composition I 3 MTH 101 Statistics and Probability 3</p> <p><b><u>Second Semester</u></b></p> <p>GIS 201 Intro. to Spatial Analysis 4 GIS 211 Advanced Applications in GIS 4 GIS 298 Application Projects 3 GIS Elective 3</p> <p><b><u>Summer Semester</u></b></p> <p>GIS 299 GIS Internship 3</p> <p><b><u>Part-time/Evening - (First Quarter)</u></b></p> <p>GIS 101 Cartography/Computer Map Reading 3 ENG 101 College Composition I 3 MTH 101 Statistics and Probability 3</p> <p><b><u>Second Quarter</u></b></p> <p>GIS 111 Fundamentals of GIS 4 GIS 201 Intro. to Spatial Analysis 4</p> <p><b><u>Third Quarter</u></b></p> <p>GIS 211 Advanced Applications in GIS 4 GIS 298 GIS Application Projects 3</p> <p><b><u>Fourth Quarter</u></b></p> <p>GIS Elective 3 GIS 299 GIS Internship 3</p>
<p><b>RECOMMENDED SEQUENCE OF COURSES:*</b></p>	

\*NOTE: This plan assumes the completion of all required developmental courses in reading, writing, and mathematics as well as other pre- and co-requisites for some of the courses, as listed in the Course Descriptions section of the catalog.