(U//FOUO) Geospatial Information Systems (GIS) Certificate Program

FROM: [redacted]
Office of the Provost
Run Date: 07/09/2003

(U//FOUO) THE SIGINT Directorate-NCS Office of Training and Development is pleased to announce a new, innovative program in Geospatial Information Systems (GIS). A certificate program, consisting of eight different courses, will be offered during duty hours at NSA and will provide SIGINT Directorate analysts state-of-art training in GIS. This program, sponsored by the Analysis and Production Directorate, has been brought to NSA as a result of a partnership with George Mason University, one of the leading academic providers of GIS learning. It represents a first of its kind and a major step forward in the A&P; goals for rebuilding analysis. Courses will be scheduled over an eight month period and students will need to make a commitment to complete the program.

(U) **NOMINATION ACTION:** If you are currently in a job where GIS is an analytical tool or in a job where a GIS requirement has been recognized, and you are able to make a serious, strict commitment of three full days approximately every four weeks beginning in September 2003, with a break in December, and ending in May 2004, please review the course description/outline below and forward the following completed via email to [redacted], by **COB 08 August 2003** .

- COURSE TITLE: George Mason GIS Certificate Program
- DATE: See Below for title/date of each course offering
- FULL NAME:
- SSN (for registration purposes):
- ORGANIZATION DESIGNATOR:
- SUPERVISOR concurs: Name of Supervisor
- Justification:

(U) **JUSTIFICATION:** Individual applications will be evaluated for acceptance based on the information submitted in the student justification. Students should include detailed information on their GIS experience and the specific relevance of this material to their existing organization's CURRENT mission.

(U) **APPROVAL NOTICES:** Selected students will be notified via phone by [redacted] When registered, students will also receive a PeopleSoft (psoft) approval notice via e-mail.

(U) **ATTENDANCE:** Students must attend the entire eight (8) 3-day session individual courses. Individuals must be willing to be completely committed to the program, therefore, withdrawals will not be permitted except for extreme circumstances. In such cases, students will need to contact [redacted] directly.

(U) **ALLOCATIONS:** SID (24)

(U) **DATES/TIMES/LOCATION:** 0800-1630 - FANX II - Room A2D003

(U//FOUO) **POINTS-OF-CONTACT:** For concerns on the individuals' technical preparation, interests, or organizational relevance, please contact [redacted] For administrative inquiries or special needs assistance, please contact the Course Manager [redacted]

COURSE DESCRIPTION

Practical Geography - 08-10 September 2003

Serves as a primer to bring GIS program students to a common level of knowledge on fundamental geographic principles to include projections, coordinate systems, basic cartography and sources of geographic data.

Introduction to Geographic Information Systems - 06-08 October 2003

Examines what a GIS is, why it is important, and how GIS technology can be applied in today's world. Demonstrates the value of a GIS in a variety of applications. Includes practical examples of GIS application in industry and government. Includes a basic-level student GIS project.

How to Use a Geographic Information System - 03-05 November 2003

Students learn about the components and individual functions of a GIS as well as cartographic techniques to include projections, coordinate systems and basic mapmaking principles. Introduces students to data sources and data collection strategies. Students also learn about feature design and manipulation. Includes a student GIS project.

Spatial Analysis - 12-14 January 2004

Examines basic spatial analysis principles and techniques. Students learn attribute comparison and analysis, statistical analysis of geospatial data, and become proficient in the use of ESRI spatial analysis tools. Students also learn about feature design and application. Students complete a series of exercises in spatial analysis.

GIS Database Design - 23-25 February 2004

Students learn how to design and implement a spatial database to include metadata management, data dictionaries, information system standards and digital map library construction. Students also learn advanced database design principles such as data conversion and data quality assurance. Course is focused on practical exercises in database design and manipulation.

Advanced Map Design - 22-24 March 2004

Provides in-depth instruction on map projections and coordinate systems. Teaches design concepts and planning requirements for map design and presentation with an emphasis on matching the presentation vehicle with the intended message. Students complete a series of exercises on identifying and using map projections, and develop useful maps for presentations, publication, and decision support.

GIS Customization - 26-28 April 2004

Students learn about the available methods of customizing ESRI GIS tools for specialized applications. Course provides basic-level instruction in either Avenue or Visual Basic depending on the ESRI software chosen for the program. Students become proficient in Arc Extension integration by building and integrating a simple extension.

GIS Management - 17-19 May 2004

Provides instruction on the following elements of GIS management:

- Requirements Analysis
- Implementation
- Budgeting
- Software and Hardware Procurement
- Data Acquisition
- Legal Issues
- Training

Students are provided with examples of GIS integration from industry and/or government.