



**A National Indian  
Community College and  
Land Grant Institution**

**History** SIPI was founded in 1971 with the goal of providing higher education for Native peoples. SIPI has been accredited by the Higher Learning Commission since 1975, and was designated a land-grant institution in 1994. Enrollment, with students from over 100 different Indian tribes, averages 750 students per academic term. The majority of SIPI students are from New Mexico and Arizona. SIPI has a distance learning program, allowing further access to students who are "place bound" in remote rural communities. SIPI provides a responsive learning environment where American Indian and Alaska Native can acquire knowledge and skills to pursue advanced academic degrees and careers in a range of fields, but particularly in fields of science, technology, mathematics, and engineering (STEM).

**Goals** Make learner success the core; develop new programs, strengthen existing programs, and recruit students to respond directly to current and projected demographic and economic trends of Indian tribes, the state in which they are located, the nation, and the world; promote the health and economic vitality of Indian tribes and communities through dynamic partnerships, coalitions, and collaborations; make better use of existing data and information, create new actionable information and customers for this information to support SIPI operational and strategic planning efforts; and provide new and expanding opportunities for faculty and staff development that supports an atmosphere of excellence in academic and student support services.

## **Degree Programs in the Department of Advanced Technical Education (ATE)**

The following five degree programs\* of the ATE Department are housed in the Science & Technology Building:

**Geospatial Information Technologies (GIT)**, offers a Certificate of Completion in Geospatial Information Technology, which includes Geographic Information Systems, Global Positioning Systems, Remote Sensing and Photogrammetry.

**Natural Resources**, offers an Associate of Applied Science degree with emphasis in Natural Resource Management of forests, range and wildlife, or Agribusiness, or Crop and Soil Science, or Environmental Science.

**Electronics Technology**, offers Associate of Applied Science degrees in Instrumentation and Control Technology, and in Computer Integrated Manufacturing Technology.

**Networking Technology**, Associate of Applied Science degree or Certificate of completion in Network Management.

**Pre-Engineering**, Associate of Science degree with an emphasis in Civil, Mechanical and Electrical Engineering, and a Certificate in Computer Aided Design.

Notably, SIPI Pre-engineering Associate of Science degree program was approved in September 2006 by the Higher Learning Commission of the North Central Association of Schools and Colleges.

\* All Associate of Science degrees from the ATE program are transferable to a four-year degree institution.



## **GEOSPATIAL INFORMATION TECHNOLOGIES PROGRAM**

**DEPARTMENT OF  
ADVANCED TECHNICAL EDUCATION**

**Science and Technology Building**



## **Southwestern Indian Polytechnic Institute**

**A National Indian Community College  
a**

**Land Grant Institution  
Accredited by the  
Higher Learning Commission  
Member of the  
North Central Association**



**Southwestern Indian  
Polytechnic Institute  
9169 Coors Road, NW  
Albuquerque, NM 87120  
Phone: (505) 346-2347  
FAX: (505) 346-2343  
www.sipi.edu**

# GEOSPATIAL

## Geospatial Information Technologies (GIT) Program

The GIT Program currently offers a Certificate on GIS, GPS, Remote Sensing and Photogrammetry & Mapping tailored to Indian tribes needs.

This GIT Certificate program prepares the student for a career in geospatial information technology by learning the processes used in data capture, editing, and analysis. The student is prepared for entering into either entry-level technical positions or into a four-year institution for further education.

The GIT Program provides the entire geospatial curricula for the GIT Certificate, the Summer Institute program to SIPI and all of the other Tribal Colleges and Universities, and to the Academic Certificate and Degree Programs at SIPI.

To meet the above needs, the GIT Program has an existing sixteen-seat geospatial laboratory (Technology Tribal Center, TTC). The TTC makes every effort to have current versions of software and hardware so that we can provide specialized training. SIPI maintains a lab license for the following software:

ESRI's ArcGIS suite of software

ERDAS's IMAGINE Professional

Trimble's Pathfinder Office and TerraSync.

In terms of hardware, SIPI maintains a Trimble ProXR, two of each of the Trimble GeoXT and TSCe models and six units of each of the following: Compaq Ipaq H3900, Trimble Geoplotter3. Upgrades for this equipment are planned this year.

The GIT lab is equipped with both a wall-mounted SmartBoard and a portable, plasma screen SmartBoard, an HP LaserJet5 printer, an HP DesignJet 50ps printer, and an HP 2500 large-format plotter. Upgrades for the HP large format plotter and the DesignJet 50 ps are scheduled for this year.

The geospatial technologies staff has backgrounds in GIS management, GIS application support for natural resources, and Information Technologies. For those classes not taught by staff and the development of some curriculum, SIPI contracts with local industry vendors. In order to provide comprehensive, up-to-date training, the SIPI staff attends a variety of trainings and seminars throughout the year.

# INFORMATION



# TECHNOLOGIES

## THE COURSE WORK

### **GIT 101 Introduction to Digital Cartography**

The course provides the students with a vocabulary and comprehensive understanding of basic and fundamental mapping principles: design, projections, scales, thematic compilation, composition, symbolization and computer production.

### **GIT 111 Introduction to GIS/GPS Technology**

An introduction to the methods and techniques currently used in the applications of Geographical Information Systems (GIS) and GPS.

### **GIT 121 Advanced GIS/GPS with Applications**

An advanced look at GIS and GPS. This course will review the initial concepts covered in GIT 111 and continue through a complete GIS/GPS project. The students will develop the GIS/GPS project from conception to final presentation.

### **GIT 201 Applied GIS/GPS Project**

This course is designed to introduce the student to hands-on-applications of GIS principles. The class is designed to enhance GIS skills learned in the previous Introduction and Advanced GIS/GPS classes.

### **GIT 202 Introduction to Photogrammetry**

An introduction to the fundamental principles of photogrammetry, with specialized applications in new technologies, and GIS.

### **GIT 203 Introduction to Remote Sensing**

This course will provide students with the understanding of the fundamental principles of remote sensing, with an emphasis on digital imagery interpretation and an initial detour to analog (aerial photography) imagery interpretation.

### **GIT 280 Practicum/Internship**

This special course offers students the opportunity to further their knowledge in geospatial informational technologies through independent study, or the opportunity to further their knowledge/experience by working at an agency utilizing and working with geospatial technologies.

### **GIT 290 Special Topics in Geospatial Technologies**

This specialized course offers students the opportunity to further their knowledge/experience in a very specific field using geospatial information technology. Several options will be offered in the 2010-2011 period: Rangeland Inventory, Water Resources Analysis, and Native American Social/Economic Geographic Distribution.