Southwestern College has a geospatial science and technology program that is designed to serve two student cohorts: 1) Those seeking a career within geospatial technologies; and 2) Students in an ancillary “spatial” discipline (such as business, economics, criminology, environmental science, math, engineering, political science, social science, physical science, etc.) in which geospatial technology and spatial thinking coursework will strengthen their academic and career “toolset.” Geospatial is a growing occupation and becoming more of a pervasive tool across a variety of industries and applications; we want our program to serve those needs.

Our recruitment strategy for the program has been twofold. First and foremost, we created a GE (general education)—satisfying introductory geospatial awareness and spatial literacy course that fulfills a variety of graduation requirements (including Computer Literacy, Language and Analytical Thinking, Interdisciplinary Social or Behavioral Science, and Mathematics and Quantitative Reasoning). The course has the following, basic objectives:

1) Introduce geospatial technologies (including career opportunities in the geospatial industry) to a large and diverse cohort of students;

2) Recruit more students into GIST programs (once in the course, the “newbies” will be so fascinated with the topic—including the concept of spatial thinking and its importance—that many of them will choose to continue their respective GIST program;

3) Once a GE course, seek other programs on campus to include it in their core curriculum (for example, at SWC, the GE-GIST course is core curriculum within the Urban Development and Business programs); and

4) Simply offer a quality course in spatial literacy. Spatial thinking is integral to the success of all students, yet it’s a topic that has been historically lacking in education (at all levels).

Certainly, subtle acknowledgement of the need to be spatially aware has existed within spatial disciplines, however direct instruction on how to spatially think has not been a part of traditional curriculum. As Michael Goodchild so eloquently put it, “spatial literacy is a set of abilities related to working and reasoning in a spatial world and to making a picture truly worth a thousand worlds. Children grow up to function as adults in a world in which the three Rs—reading, writing, and arithmetic—are considered essential as much to basic functioning as to the realization of
life’s higher objectives. Today, we surely have to add spatial literacy to the list” (Goodchild, 2006).

Our GE course (entitled Geographic Information Science and Spatial Reasoning) focuses upon spatial thinking, spatial awareness, and how geospatial technology is being implemented across a variety of disciplines. The course attracts over 100 students annually. It is important to note that, largely due to this course, the diversity of our student cohort remains relatively high. The female enrollment of our GIST GE course is typically 40% to 60%. According to a 2009 survey conducted by the GeoTech Center (http://www.geotechcenter.org), female enrollment in a non-GE GIST course is typically 25% to 30%. As one would expect, a general education course offering has the added benefit of attracting a more diverse student population (including underserved and underrepresented groups) into geospatial science and spatial literacy courses.

Our second method of recruitment is to “seed” geospatial and spatial reasoning curriculum within a variety of academic disciplines across the campus. By introducing geospatial learning module(s) into a diverse set of courses we are effectively introducing students to spatial thinking and exposing them to how geospatial technology is a part of “their” discipline. Spatial-thinking learning modules (using tools such as Google Earth, ArcGIS Desktop, ArcGIS Explorer Online, and a variety of Internet sites) are now being employed on our campus within 8 unique disciplines (in approximately 50 sections), touching more than 2,000 students annually (and this number is growing every semester).

Perhaps one of the best ways to tackle the lack of spatial thinking in college curriculum is to add “Spatial Literacy” to the list of GE categories. A Spatial Literacy GE category, along with the augmentation of spatial thinking modules into present curriculum, would go a long way to minimizing the spatial teaching gap at the collegiate level. Of course, the list of graduation requirements for students has seemingly been growing over the past decade. Short of creating a Spatial Literacy GE category, another option is to do as we did at Southwestern College: create geospatial awareness and spatial thinking coursework that satisfies a number of already established GE categories.

Reference: