



Chapter XIV

**Tracking Through
Information Technology
Education**

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ABSTRACT

With a projected 2.26 million additional jobs to fill in various computer fields by the year 2010, there are and will continue to be ample job opportunities in the computer industry. However, the computer field is far too broad for one individual to be an expert in the entire field. Therefore, it may be more useful for students to have the opportunity to concentrate their studies in a specific interest area within a broader information technology degree. This chapter discusses the creation of a database track within an Information Technology (IT) or Computer Information Systems (CIS) degree program so that undergraduate students can choose to focus on this specialty area in their junior and senior years.

INTRODUCTION

IT educators throughout the United States have paid attention to the IT industry. To address the need for IT graduates with specialized skills, many of the leading universities have created an IT program that allows the students to specialize or focus their studies. This chapter will discuss some findings on the state of IT programs and their offerings and examine in-depth one university's database specialization track.

BACKGROUND

The Bureau of Labor Statistics reported 2.9 million computer-related jobs in 2000, with an expected 4.89 million computer jobs by the year 2010. Considering new jobs as well as replacements, over 2.26 million additional people will be needed to fill these jobs (Hecker, 2001, p. 9).

WHERE ARE THE SPECIALIZED IT PROGRAMS?

Starting with an attendance list from the Conference for IT Curriculum (CITC) II, we explored the published curriculum from those institutes. In attendance at the conference were IT educators from around the United States who had an interest in IT curriculum issues. An IT curriculum is focused on the application of technologies to solve problems. To differentiate, a traditional computer science curriculum is focused on algorithm design.

If we look at Table 1, we see that out of the 28 programs represented, 50% (14) had some specialization available for students. Of the 14 programs that offered specializations, 45% (six) of those offered at least a database specialization.

ANATOMY OF A DATABASE TRACK

With the Bureau's computer workforce projections, it is not surprising that computer-related degree programs are in high demand. After many years of accepting all qualified students who applied, our IT program has been forced in recent years to turn away some highly qualified candidates, because our classes are full. In Fall 2001, there were 664 students majoring in our program, whereas in earlier years, we had stabilized at around 400 students.

For many years, we have offered a general IT degree program that provides students with a broad background in systems analysis and design, application development and programming, computer networking, and database modeling and programming. Students had a few computer electives that they could use to develop one or more areas of interest. The curriculum was regularly evaluated and updated to respond to current industry needs and trends.

As the program grew, so did interest in specializations within the department. In 1997, our department created a Telecommunications and Networking specialization within the IT degree. Students could choose between a general IT degree and the telecommunications option. With the success of the telecommunications option, it was natural to expand the specialization options into the remaining areas of faculty expertise — application develop-

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