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Chapter 3

Establishing a Telecommunications and Networking Technology B.S. Degree

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As distributed computing architectures have increased, the need for technology professionals that are skilled in telecommunications and networking has dramatically increased. Employers are looking for students that not only have conceptual knowledge but also hands-on practical experience when hiring graduates into telecomm and networking related positions. This chapter will discuss how a telecommunications and networking bachelor's degree option was established at Purdue University. The chapter will discuss why the program started and discuss how it has evolved. Other areas discussed include: the curriculum, facilities, faculty, and the industrial advisory board. The paper will conclude with where the program is going to grow.

WHY THE PROGRAM STARTED

As the personal computer emerged companies started networking their computers together. As technology advanced and companies started developing local area networks (LANs) and wide area networks (WANs) the need for skilled professionals in these areas increased. At the same time, many students going through the information systems curriculum at Purdue University wanted more courses in this area and they also wanted hands-on practical experience.

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EVOLUTION OF THE PROGRAM

The Computer Technology Department (CPT) at Purdue University was established in 1978 and its primary focus was on information systems (IS). In the IS curriculum there was only one lecture-based course on data communications. The students wanted to learn more and also have the opportunity to gain hands-on experience. As a result, the CPT department created a concentration within the IS degree which consisted of four telecomm and networking courses: CPT 176 - Information Technology and Architecture, CPT 230 - Introduction to Data Communications, CPT 330 - PC Connectivity and Local Area Networking, and CPT 430 - Wide Area Networking. After creating these courses and realizing the demand for them from both students and industry in 1997 the department decided to create a bachelor's degree option in Telecommunications and Networking Technology (TNT). There are currently 189 students seeking a bachelor's degree in TNT. The breakdown by class is: 28 freshman, 60 sophomores, 59 juniors, and 42 seniors. There have been 11 graduates from the TNT program and the placement rate is at 100%.

CURRICULUM

In order to earn a degree in TNT a student must complete between 129 and 132 credit hours. The curriculum does differ from the traditional information systems degree in more areas than just the computing courses that a student takes. The TNT curriculum includes three courses in electrical engineering technology, a physics course, two calculus courses, and a more advanced statistic probability course. Additionally, students select one of the following specialization sequences which is made up of three courses: Manufacturing, Information Systems, or Digital Communications. Figure 1 provides an overview of the TNT curriculum architecture.

Figure 1: Overview of TNT curriculum architecture