

Computer-aided quality control is discussed in Chapter 10. Quality control has to be planned within a plant-wide systems approach. The standards for quality are set by the customer. These standards have repercussions on all functions of a manufacturing system. The topics of this chapter are quality control planning, quality control methods and test procedures, the architecture of computerized measuring systems, and hierarchical computer concepts for quality control. Particular attention is given to problems that arise when quality control operations are done on moving assembly lines. Methods to enable a computerized system to learn its own test tolerances are also discussed. The application of coordinate measuring machines is covered in more detail.

Chapter 11 is devoted to the programmable factory. The computer concepts of the previous chapters are incorporated in such a factory to obtain a true FMS. Such a system consists of a group of machine tools and/or production equipment interconnected by an automated material handling system. A computer, or usually a hierarchical computer system, plans, executes, and controls the production process. The components and various configurations of a FMS are described. The chapter concludes with an illustration of several FMSs used by different industries.

*Computer-Integrated Manufacturing Technology and Systems* is based on a CAD/CAM course for students at the University of Karlsruhe. The course has also been presented at universities in the United States and in other countries in answer to the need of the industrial community for young engineers and computer scientists who have a basic understanding of the complex functions of computers to control manufacturing processes.

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