# MAN4523 Production Information Systems

**MAN4523**  
**Production Information Systems**

**Course Description:** This course presents the fundamental aspects of computer technology required by the systems that provide data to, and derive information from, production in manufacturing. Students will learn the techniques to organize, store, manipulate data, report, derive and analyze production information, basics networking used in production, as well as various forms of information systems. (3 hr. lecture)  
Prerequisite: CGS1060, MAN2021

## Course Competency

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<tr>
<th>Competency 1: The student will be able to understand the general principles of Production Information Systems by:</th>
<th>Learning Outcomes</th>
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| 1. Defining Production Information Systems  
2. Illustrating how Production Information Systems is an integral part of the management of production systems  
3. Illustrating the fundamental aspects of production  
4. Examining the basic theories, concepts, methods, and terminology used in Production Information Systems | 4. Information Literacy |

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<tr>
<th>Competency 2: The student will demonstrate the underlying technologies that enable Production Information Systems by:</th>
<th>Learning Outcomes</th>
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| 1. Illustrating the various modes of telecommunications  
2. Assessing current network infrastructures used in industry  
3. Depicting the various means by which data is sent to, and information is gathered from production information systems using the underlying networking technologies  
4. Discussing how production systems communicate within their systems and to external monitoring/data gathering systems | 1. Communication  
2. Numbers / Data |

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<th>Competency 3: The student will demonstrate how Production Information Systems are developed by:</th>
<th>Learning Outcomes</th>
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| 1. Describing the phases of systems analysis and design  
2. Creating each phase of the systems analysis and design methodology using the applicable automation tool  
3. Designing a basic production information system via a model | 3. Critical thinking |

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<th>Competency 4: The student will develop a desktop database application by:</th>
<th>Learning Outcomes</th>
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| 1. Creating a new database  
2. Defining Data Types that define the data being stored  
3. Creating Tables in design view  
4. Adding and deleting records in a table  
5. Creating and modifying a Form | 8. Computer / Technology Usage |
6. Creating and modifying a Report

**Competency 5:** The student will demonstrate the uses of a desktop database by:

1. Creating relationships between tables and enforcing referential integrity
2. Sorting and indexing records
3. Creating Simple queries
4. Creating Compound queries and using comparison operators
5. Creating Complex queries
6. Creating calculated values in a query

**Competency 6:** The student will perform statistical and non-statistical data analysis on domain-specific data using a desktop database application by:

1. Applying each of the following statistical methods to the data: - Average, Median, Mode, Max, Min - Frequency Distribution - Normal and Binomial distribution - Correlation Coefficient and Covariance
2. Applying ordering and roll-up techniques to summarize the data
3. Converting data into multi-dimensional information by: - Creating pivot tables and pivot web-forms - Generating 2, 3 and n-dimensional graphs, charts and pivot charts referencing the pivot tables and pivot web-forms.

**Competency 7:** The student will demonstrate the use and interpretation of basic analytics on the domain-specific information through the use of a desktop database by:

1. Performing basic data mining
2. “Rolling-up”, “Drilling-down” and “Slicing and Dicing” on pivot tables
3. Interpreting 2, 3, and n-dimensional graphs and charts
4. Creating and implementing what-if scenarios
5. Generating executive management reports and graphics

**Competency 8:** The student will evaluate the appropriate controls required for business information systems specifically addressing related security concerns and regulatory requirements by:

1. Examining the role of information systems to functions within a supply chain.
2. Integrating business processes to support decision making
3. Applying the concepts and practices associated with ERP systems
4. Analyzing Customer Relationship Management (CRM)
5. Examining e-procurement concepts