DATE OF LAST REVIEW: 02/2013

CIP CODE: 11.0801

SEMESTER: Departmental Syllabus

COURSE TITLE: Introduction to Data Warehousing

COURSE NUMBER: CIST-0132

CREDIT HOURS: 3

INSTRUCTOR: Departmental Syllabus

OFFICE LOCATION: Departmental Syllabus

OFFICE HOURS: Departmental Syllabus

TELEPHONE: 913-334-1100

PREREQUISITE(S): CIST-0101 Computer Concepts and Applications

REQUIRED TEXT AND MATERIALS:
Please see bookstore for current textbook.

COURSE DESCRIPTION:
Introduction to Data Warehousing provides an overview of Data Warehousing technology. The course will explore the fundamental concepts of data warehousing; provide common data warehousing terminology and language, and provide practical approaches and requirements for designing, implementing and maintaining a data warehouse.

METHOD OF INSTRUCTION:
A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, and panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE:

I. An Introduction to Data Warehousing Concepts
   A. The role of information in business
   B. Information delivery mechanisms
   C. Common data warehousing terminology

II. Data Warehousing versus the Data Mart
   A. What is a data warehouse?
   B. What is a data mart?
   C. Similarities and differences

III. Trends Driving the Need for Data Warehousing
   A. Changing business trends that have made data warehousing a popular solution for many organizations
B. Cost-effectiveness of data warehousing in today's information technology environments
C. The value of data warehousing information
D. Cost versus value, identifying the return on investing in data warehousing

IV. The Impacts of Data Warehousing
A. Human Impacts of Data Warehousing
B. Business Impacts of Data Warehousing
C. Technical Impacts of Data Warehousing

V. The Data Warehouse Process
A. Prerequisites to building a data warehouse
B. Examining the data warehouse process
C. The process of building a data warehouse
D. Supporting the data warehouse
E. Maintaining the data warehouse
F. Using the data warehouse

VI. Data Access
A. Data warehouse query characteristics
B. Data modeling
C. Data loading
D. Data mining
E. Data extraction
F. Data transforming
G. Data cleansing
H. Available products for data access
I. Considerations, risks, and challenges that need to be faced in data access

VII. Case Study

EXPECTED LEARNER OUTCOMES:
1. Upon successful completion of Introduction to Data Warehousing, the student will be able to describe the role of information in business and information delivery mechanisms as they relate to basic data warehousing concepts.
2. Upon successful completion of Introduction to Data Warehousing, the student will be able to identify common terminology used in data warehousing.
3. Upon successful completion of Introduction to Data Warehousing, the student will be able to describe the characteristics and major components of a data warehouse.
4. Upon successful completion of Introduction to Data Warehousing, the student will be able to describe data marts.
5. Upon successful completion of Introduction to Data Warehousing, the student will be able to identify the differences between a data warehouse and an operational system.
6. Upon successful completion of Introduction to Data Warehousing, the student will be able to describe the difference between a data warehouse and a data mart.
7. Upon successful completion of Introduction to Data Warehousing, the student will be able to identify business trends driving the need for data warehousing.
8. Upon successful completion of Introduction to Data Warehousing, the student will be able to explain the human, business, and technical impacts of data warehousing.
9. Upon successful completion of Introduction to Data Warehousing, the student will be able to describe the processes used for developing, supporting, and maintaining a data warehouse.
10. Upon successful completion of Introduction to Data Warehousing, the student will be able to identify methods and products available for data access in the data warehouse.
11. Upon successful completion of Introduction to Data Warehousing, the student will be able to describe methods for data modeling, data loading, data extraction, data mining, data
transforming, and data cleansing.

**COURSE COMPETENCIES:**

1. Describe the role of information in business and information delivery mechanisms as they relate to basic data warehousing concepts.
2. Identify Common terminology used in data warehousing.
3. Describe the characteristics and major components of a data warehouse.
4. Identify the differences between a data warehouse and an operational system.
5. Determine the size of a very large database (VLDB).
6. Describe data marts.
7. Identify the differences between a data warehouse and a data mart.
8. Describe changing business trends that have made data warehousing necessary for many organizations today.
9. Determine the cost-effectiveness of using data warehousing in information technology environment today.
10. Describe why operational systems do not always provide businesses with meaningful information.
11. Identify the benefits and returns on investing in data warehousing.
12. Identify human, organizational and technical impacts of data warehousing.
13. Describe the warehouse process.
14. Describe the process required for maintenance of the data in the data warehouse.
15. Describe a variety of different data warehouse architectures and topologies.
16. Describe what contents are appropriate for data warehouses.
17. Describe the considerations, risks, and challenges that need to be faced in order to ensure a successful data warehouse implementation.
18. Describe the tools necessary for implementing a data warehouse.
19. Describe the process for building a data warehouse.
20. Identify the different components of a data warehouse and their functions.
21. Identify the features and use of data models such as star, snowflake, and mixed.
22. Define the methods of managing the data cleansing process.
23. Identify basic concepts for creating a data model.
24. Identify information access methods.
25. Define data mining.
26. Define the methods of managing the data extraction process.
27. Define the methods of managing the data transforming process.
28. Define the methods of managing the process of loading data.
29. Identify storage and access requirements of a data warehouse.
30. Distinguish between and use both simple and complex queries.

**ASSESSMENT OF LEARNER OUTCOMES:**

Assessment methods may include, but are not limited to, the following: Homework, Assignments, Quizzes, Class Participation, Chapter Tests, and Final Exam. The grading scale and the process for calculating the course grades are to be determined by the individual instructors. This information will be included in each instructor’s syllabus.

**SPECIAL NOTES:**

This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

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