DATE OF LAST REVIEW: 02/2013
CIP CODE: 15.1201
SEMESTER: Departmental Syllabus
COURSE TITLE: Principles of Data Warehousing
COURSE NUMBER: CIST-0154
CREDIT HOURS: 4
INSTRUCTOR: Departmental Syllabus
OFFICE LOCATION: Departmental Syllabus
OFFICE HOURS: Departmental Syllabus
TELEPHONE: Departmental Syllabus
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PREREQUISITE(S): CIST-0101 Computer Concepts and Applications

REQUIRED TEXT(S): Please check with the KCKCC bookstore, http://www.kckccbookstore.com/, for the required texts for your particular class.

COURSE DESCRIPTION:
This course will provide the student with an understanding of the principles of data warehousing. Topics will include data model development, star schemas, snowflake schemas, and dimensional modeling. Metadata (formal descriptions of tables, columns, domains, and constraints will also be included. Students will have an understanding of what must be included in a data warehouse as well as ten mistakes to avoid.

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:
Course content may vary, but will generally include the following:
I. Data Modeling Fundamentals
   A. Understanding Transactions
   B. Understanding Users and Managers
   C. The Time Dimension
   D. The Entity Relation Data Model
   E. The Dimensional Model
   F. The Fact Table
   G. Dimension Tables
H. The Standard Query Template
I. Data Warehouse Attributes

II. The Grocery Store
A. Design Process Steps
B. Grocery Store Item Movement
C. Identifying Modeling Processes
D. Fact Table Business Measurements
E. Normalization
F. Product Dimension
G. Time Dimension
H. Grocery Store Facts
I. Database for the Grocery Chain

III. The Warehouse
A. Inventory Models
B. Gross Margin Return on Inventory
C. The Delivery Status Model
D. The Transaction Model
E. Database Sizing

IV. Building the Dimensional Data Warehouse
A. Nine Decision Points
B. Interviewing End Users
C. Analyzing End User Interviews
D. Table Details
E. Physical Design
F. Star Schema
G. Snowflake Schema
H. Metadata

EXPECTED LEARNER OUTCOMES:
A. Upon completion of the course the student will be able to demonstrate knowledge of the elements of a Data Model.
B. Upon completion of the course the student will be able to demonstrate knowledge of the Grocery Store as it relates to Data Warehousing.
C. Upon completion of the course the student will be able to demonstrate knowledge of the elements of a Data Warehouse.
D. Upon completion of the course the student will be able to demonstrate an understanding of the elements which are necessary in the construction of a Dimensional Data Warehouse.

COURSE COMPETENCIES:
1. Upon completion of the course the student will be able to define terminology as related to Data Modeling.
2. Upon completion of the course the student will be able to identify transactions as related to Data Modeling.
3. Upon completion of the course the student will be able to differentiate between users and managers as related to Data Modeling.
4. Upon completion of the course the student will be able to identify the needs of users and managers as related to Data Modeling.
5. Upon completion of the course the student will be able to differentiate between a twinkling database, temporal consistency, and static snapshots as they relate to a Data Model
6. Upon completion of the course the student will be able to identify the role the Entity Relation Data Model plays in a Data Model.
7. Upon completion of the course the student will be able to identify the elements of a Dimensional Model.
8. Upon completion of the course the student will be able to identify the elements of a Fact Table in a Dimensional Model.
9. Upon completion of the course the student will be able to differentiate between a Fact Table and Dimension Tables in a Data Model.
10. Upon completion of the course the student will be able to interpret a Fact Table in a Data Model.
11. Upon completion of the course the student will be able to interpret a Dimension Table in a Data Model.
12. Upon completion of the course the student will be able to interpret a Standard Query Template in a Data Model.
13. Upon completion of the course the student will be able to interpret data and create attributes in a Data Model.

Upon completion of the course the student will be able to demonstrate knowledge of the Grocery Store as it relates to Data Warehousing.
14. Upon completion of the course the student will be able to define the terminology as related to the Grocery Store.
15. Upon completion of the course the student will be able to list the steps involved in developing the Grocery Store.
16. Upon completion of the course the student will be able to differentiate between the terms business process, grain, dimensions, and measured facts as they relate to the Grocery Store.
17. Upon completion of the course the student will be able to identify the manner in which items will move in a Grocery Store.
18. Upon completion of the course the student will be able to define the terms market basket, cannibalized, and syndicated data suppliers as they relate to the modeling process.
19. Upon completion of the course the student will be able to define normalization as it relates to the Grocery Store.
20. Upon completion of the course the student will be able to interpret data and create a time dimension table.
21. Upon completion of the course the student will be able to interpret data and create a product dimension table.
22. Upon completion of the course the student will be able to interpret data and generate Grocery Store Facts as they relate to a Data Model.
23. Upon completion of the course the student will be able to interpret data and determine the appropriate database size as it relates to the Grocery Store.

Upon completion of the course the student will be able to demonstrate knowledge of the elements of a Data Warehouse.
24. Upon completion of the course the student will be able to identify an inventory snapshot model.
25. Upon completion of the course the student will be able to interpret data and create an inventory snapshot model.
26. Upon completion of the course the student will be able to identify a delivery status inventory model.
27. Upon completion of the course the student will be able to interpret data and create a delivery status inventory model.
28. Upon completion of the course the student will be able to identify a Gross Margin Return on Inventory (GMROI) Model.
29. Upon completion of the course the student will be able to interpret data and create a Gross Margin Return on Inventory (GMROI) Model.
30. Upon completion of the course the student will be able to identify a Delivery Status Model.
31. Upon completion of the course the student will be able to interpret data and create a Delivery Status Model.
32. Upon completion of the course the student will be able to identify a Transaction Model.
33. Upon completion of the course the student will be able to interpret data and create a Transaction Model.
34. Upon completion of the course the student will be able to interpret data and determine the appropriate size for a warehouse.

Upon completion of the course the student will be able to demonstrate an understanding of the elements which are necessary in the construction of a Dimensional Data Warehouse.
35. Upon completion of the course the student will be able to define the Nine Decision Points of a Dimensional Data Warehouse.
36. Upon completion of the course the student will be able to interpret data and apply the Nine Decision Points of a Dimensional Data Warehouse.
37. Upon completion of the course the student will be able to interpret data and create an end user questionnaire.
38. Upon completion of the course the student will be able to interpret data and determine needs of end users.
39. Upon completion of the course the student will be able to interpret data and create tables and attributes appropriate to the warehouse.
40. Upon completion of the course the student will be able to define star schema.
41. Upon completion of the course the student will be able interpret data and create a star schema.
42. Upon completion of the course the student will be able to define snowflake schema.
43. Upon completion of the course the student will be able to interpret data and create a snowflake schema.
44. Upon completion of the course the student will be able to define metadata.
45. Upon completion of the course the student will be able to identify metadata.
46. Upon completion of the course the student will be able to demonstrate an ability to meet deadlines.

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.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact the Director of the Academic Resource Center in Room 3354 or call 288-7670.