Miami Dade College

Course Competencies Template - Form 112

GENERAL INFORMATION	
Name: Kaiyang Liang	Phone #: 72993
Course Prefix/Number: CTS2450	Course Title: Business Intelligence: Analysis Services and Data Mining
Number of Credits: 4	
Degree Type	☐ B.A. ☐ B.S. ☐ B.A.S ☐ A.A. ☒ A.S. ☐ A.A.S. ☐ C.C.C. ☐ A.T.C. ☐ V.C.C
Date Submitted/Revised: 10-07-2010	Effective Year/Term: 2010-2
☒ New Course Competency ☐ Revised Course Competency	
Course to be designated as a General Education course (part of the 36 hours of A.A. Gen. Ed. coursework): ☐ Yes ☒ No	
The above course links to the following Learning Outcomes: ☐ Communication ☒ Numbers / Data ☒ Critical thinking ☐ Information Literacy ☐ Cultural / Global Perspective ☐ Social Responsibility ☐ Ethical Issues ☒ Computer / Technology Usage ☐ Aesthetic / Creative Activities ☐ Environmental Responsibility	
Course Description (limit to 50 words or less, **must correspond with course description on Form 102**): This is one of two courses in business intelligence designed to provide AS degree students majoring in computer information technology, database technology, or Internet services technology with skills necessary for advanced web-based applications. This course provides an introduction to various data mining and business intelligence techniques. Students will learn Analysis Services and Data Mining, including database and problem-solving skills. The course focuses on how these techniques are applied in the corporate environment to better manage business processes and how data analysis is utilized to achieve business success. Prerequisite: CGS1546 or CGS2547 or CIS2342. A.S. degree only. Laboratory fee. (3 hr lecture, 2 hr lab)	
Prerequisite(s): CGS1546 or CGS2547 or CIS2342	Corequisite(s):

Course Competencies: (for further instruction/guidelines go to: http://www.mdc.edu/asa/curriculum.asp)

Competency 1: The student will demonstrate the ability to design cube architecture by:

1. Creating and populating a cube.
2. Creating KPIs, actions, calculated members, drillthrough.
3. Designing SSAS aggregation.
4. Creating and manipulating dimensions (Ragged hierarchy, Flexible, Rigid, Semi-additive, Periodicity, Fact Relationships).
5. Selecting a processing mode.

Competency 2: The student will demonstrate how to design for international implementation by:

1. Using currency conversion to satisfy business needs.
2. Using translation to present localized cube metadata.

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3. Explaining the use and application of localization.

Competency 3: The student will demonstrate the ability to design a data source view by:

1. Using named queries to retrieve data.
2. Using denormalization strategy to speed up data access.
1. Using Code-Behind to develop application.

Competency 4: The student will demonstrate the ability to design perspectives by:

1. Enhancing usability through the use of perspectives on the following objects:
   a. Dimensions (hierarchies and attributes)
   b. Measures groups (measures)
   c. KPIs
   d. Calculated members
   e. Actions
2. Implementing perspectives to create simplified views of a particular cube.

Competency 5: The student will demonstrate the ability to design and create business-driven Multidimensional Expressions (MDX) calculations.

1. Creating Calculated Members.
2. Creating a named set in MDX.

Competency 6: The student will demonstrate how to analyze cube performance by:

1. Optimizing SSAS aggregation.
2. Using query cube design to analyze performance data.
3. Defining key performance indicators for cube.
4. Discovering and Querying KPIs.

Competency 7: The student will demonstrate how to design a mining model and structure by:

1. Assigning a data source.
2. Specifying filter properties.
3. Reconciling heterogeneous data sources.
4. Selecting a refresh strategy (partial or full).

Competency 8: The student will demonstrate how to design strategies for staging data for mining by:

1. Selecting a method for cleaning data (closed-loop process).
2. Specifying partitioning of data into testing and training sets

Competency 9: The student will demonstrate how to select a strategy for visualizing data mining results by:

1. Implementing DMX queries (drill-through queries, structured and unstructured columns, column aliasing).
2. Applying the data mining Microsoft Office Excel add-in to analyze spreadsheet data.
3. Designing a report by using reporting services.

Competency 10: The student will demonstrate how to select data mining algorithms by by:

1. Using sequence, time series, neural net, association, and decision tree functions.
2. Creating data mining structures in BIDS.
3. Using classification to predict the values of one more fixed variables base on multiple input variables.
4. Using the clustering algorithm to enable end users understand the relations between attributes in a large volume of data.

Competency 11: The student will demonstrate how to refine testing models by:

1. Applying predictions.
2. Analyzing results.
3. Performing cross-validation.