EE6435: Multi-Dimensional Data Modeling for Strategic Planning and Analysis

http://www.cityu.edu.hk.pg/current/course/EE6435.htm
Why this course is developed?
The Need of the Enterprises #1

• Entrepreneurs under big challenges to adopt volatile, fast-paced business environment
  – Require accurate analysis for sharp decision and agile strategic planning

• Primary driving forces:
  – Increased forecasting and budgeting cycles
    • Long planning cycles
    • Disconnected operational and financial plans
    • Spreadsheet-based plans
    • Lack of ownership and accountability
    • Lack of control, transparency, and governance
The Need of the Enterprises #2

• Primary driving forces (cont.):
  – Rise of scenario analytics
    • Explore and test “what if” scenarios
    • Reduce risk and create contingency plans
    • Formulate growth strategies
    • Best responses to economic change, a competitor move and marketing
    • Profitability analysis to optimize price, channel, and marketing strategy
  – Heightened ERP requirements
    • Hard to make use data collected in ERP system to help decision makers to make decisions
    • Need tools to assist decision making and business optimization

• What is the solution? How to build the solution?
The Purpose of this Course

• to provide fundamental understanding of multi-dimensional data model
  – design principles
  – Implementation
  – basic operations
  – analytical functionalities
• to introduce how multi-dimensional data models can be used to build business solutions in strategic planning and analysis
• to provide hands-on experience to develop an analytical solution
## Course Assessment

<table>
<thead>
<tr>
<th>Type of Assessment Tasks</th>
<th>Weighting</th>
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<tbody>
<tr>
<td>Continuous Assessment</td>
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<tr>
<td>Assignments</td>
<td>15%</td>
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<tr>
<td>Mini-project</td>
<td>25%</td>
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<tr>
<td>Examination</td>
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<tr>
<td>Written exam</td>
<td>60% (2 hrs)</td>
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Course Outline

• The Need for Multi-dimensional Technology
• Introduction to the Located Content Model
• The Internal Structure of a Dimension
• Hypercubes or Semantic Spaces
• Multidimensional Formulas and Links
• Analytic Visualization
• Steps for Designing and Implementing Multi-dimensional Models
• Case Studies: Sales and Profitability Analysis, Driver Based Budgeting and Planning, Intelligent Operational Optimization System
Recommended Reading


• [http://www.palo.net](http://www.palo.net)