

Standard Course Outline

IS 620 Spreadsheet Modeling for Business and Management

I. General Information

- ♦ Course number: IS 620
- ♦ Title: Spreadsheet Modeling for Business and Management
- ♦ Units: 3
- ♦ Prerequisites: Graduate standing, IS 601
- ♦ Course Coordinator: Hongyu Chen
- ♦ SCO Prepared by: Hongyu Chen
- ♦ Date prepared/revised: Apr. 27, 2016

II. Catalog Description

Business analytics using spreadsheet. Build data model, transform raw data, and deliver interactive data visualization. Solving business problems through quantitative modeling. Complete coverage of spreadsheet topics of spreadsheet formation, functions, to advanced topics of pivot table, solver, VBA and PowerPivot.

III. Curriculum Justification(s)

Spreadsheet, such as Microsoft Excel, has become the industry standard tool in business analytics, data analysis and visualization, with a rich set of features and functionalities for end users across all business areas over a wide range of purposes. It has become the most used software for business users to formulate and solve business problems. Recent advancements in spreadsheet provide powerful features in data analytics and quantitative modeling. Spreadsheet skill is considered a basic office skill by many. Mastering spreadsheet not only provides tremendous career opportunities for students, it enables business users to formulate and solve complex business problems on their desktop. This course is designed to provide complete coverage of all spreadsheet topics from introductory concepts such as problem formulation, writing formulas and functions, charting, grouping, to advanced features such as macro, pivot table, writing VBA customization, forms, what-if analysis, dimensional analysis, optimization, and quantitative modeling.

Upon completion, the student will meet the following four specific CBA learning goals:

Learning Goal #6 – Quantitative and Technical Skills

IV. Course Objectives, Student Learning Outcomes, Evaluation Instruments, and Instructional Strategies for Skill Development

OBJECTIVE: To advance students' quantitative and technical skills.

MEASURABLE OUTCOME: Students who pass IS 620 must demonstrate ...

- ability to formulate and solve business problem by using various Excel formula and functions
- ability to perform advanced data analysis using Excel
- ability to create data visualization

- proficiency in what-if analysis, scenario analysis, two-way table, goal seeking
- proficiency in pivot table, pivot chart, drill through, and macros
- ability to build data model using PowerPivot, and create interactive reports and dashboard using PowerView
- ability to customize Excel by writing VBA applications
- ability to create Excel form and adding controls
- ability to integrate Excel with other MS Office products
- ability to tackle business problems using spreadsheet modeling and decision analysis.

EVALUATION INSTRUMENTS: Specific assignments will vary by instructor, but typical assignments include take-home assignments, in-class exams and take home projects.

INSTRUCTIONAL STRATEGIES: Since spreadsheet is a computer software, the instruction should include demonstration and hand-on for each section. Standards for good spreadsheet/model will be discussed in class before and after written assignments.

V. Outline of Subject Matter

1. Introduction to Excel, Excel formatting
2. Writing formula
3. Writing functions: text, date/time, finance, math and statistics, logical, lookup and reference
4. Excel Chart, conditional formatting, data presentation and visualization
5. Spreadsheet modeling and engineering, influence chart.
6. What-if analysis, scenario analysis, two-way table, goal seeking.
7. Dimensional analysis
8. Pivot table, pivot chart, drill through
9. PowerPivot, PowerView, PowerMap, Data Analysis Expressions (DAX)
10. Macros, write customize function using VBA
11. Create Spreadsheet form, activeX controls
12. Linking Excel with other MS Office products
13. Optimization models and solver
14. linear programming, integer programming
15. Decision analysis, queueing model, simulation
16. Database, XML, and web pages

VI. Methods of Instruction

A. INSTRUCTION MODE.

- Traditional Hybrid Local Online Distance Education

B. CLASSROOM ACTIVITIES.

- i. Demonstration using computer
- ii. Hands-on.

C. EXTENT AND NATURE OF TECHNOLOGY USE.

- i. Extensive usage of computer and MS EXCEL.

VII. Information about Textbooks/Readings

Essentials of Business Analytics 2nd edition by Jeffrey D. Camm et. al, South-Western College Pub, 2016. (ISBN 978-1285187273)

Business Analytics: Data Analysis & Decision Making 5th Edition By S. Christian Albright and Wayne Winston, South-Western College Pub. (ISBN: 978-1133629603)

Microsoft Excel 2013 Data Analysis and Business Modeling by Wayne Winston, Microsoft, 2014. (ISBN 978-0735669130)

Management Science The Art of Modeling with Spreadsheets by Stephen Powell and Kenneth Baker 4th edition, Wiley, 2013. (ISBN 978-1118582695)

Required Software : MS Excel

VIII. Instructional Policies Requirements

Instructor's syllabi must contain explicit statements regarding their own policies with regard to plagiarism, withdrawal, absences, etc., which should be consistent with the University policies published in the CSULB Catalog. It is expected that every course will follow University policies on [Attendance \(PS 01-01\)](#), [Course Syllabi \(PS 04-05\)](#), and [Final Course Grades, Grading Procedures, and Final Assessments \(PS 12-03\)](#). If some or all sections of the course are to be taught, in part or entirely, by distance learning, the course must follow the provisions of [Academic Technology and the Mode of Instruction \(PS 03-11\)](#).¹ Instructors should refer to the current [CSULB Catalog](#) and to the [Academic Senate website](#) for campus guidelines and policy statements as they develop their individual course policies.

All sections of the course will have a syllabus that includes the information required by the syllabi policy adopted by the Academic Senate. Instructors will include information on how students may make up work for excused absences. When class participation is a required part of the course, syllabi will include information on how participation is assessed.

IX. Course Assessment and Grading (Optional but highly recommended for core courses)

A. Assessment Criteria

Homework

Students will complete individual and group based homework profiling their competence in various subject matters.

Quizzes and Exams

¹ The university policies listed are active as of 2015-2016 but may be subject to change in the future. For the most up-to-date policies, refer to the Academic Senate website's [Policy Statements](#).

Students will complete mid-term exam (required), and final exam (required).

Projects

Instructors are strongly encouraged to assign comprehensive course project (group) that requires problem solving and uses Excel to conduct real-world data analysis.

B. Required Statement

In compliance with university policy: Final grades will be based on at least three, and preferably four or more, demonstrations of competence. In no case will the grade on any class tests count for more than one-third of the course grade.

C. Attendance, Withdrawal, Late Assignments

Students are expected to attend courses and turn in assignments on time. Specific attendance and late assignment policies are up to each individual instructor's discretion. The withdrawal policy is the same as that of the university.

X. Disabilities

Students with disabilities are responsible for notifying their instructor as early as possible of their needs for an accommodation of a verified disability. A student with a disability is urged to consult with Disabled Student Services as soon as possible in order to identify possible accommodations to enhance academic success.

XI. Assistive Technology

In compliance with Accessibility and Faculty Responsibility for the Selection of Instructional Materials (PS 08-11), instructors are responsible for ensuring that their syllabi and instructional materials are accessible to all students.

XII. Bibliography (Optional)

XIII. Consistency of SCO Standards across Sections

XIV. Additional Resources for Development of Syllabi

- ♦ University policy [Course Syllabi and Standard Course Outlines \(PS 11-07\)](#)
- ♦ Academic Technology (ATS) [Accessible Syllabus Template](#)
- ♦ Faculty Center for Professional Development (FCPD) [Sample Syllabus Template](#)