FINC 684-01 Financial Modeling

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Xavier University

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FINC 684-01: Financial Modeling  
Spring 2017

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E-mail:  disimilem@xavier.edu  
Office hours:  By appointment  
Class Time and Location:  Online

College Mission
We educate students of business, enabling them to improve organizations and society, consistent with the Jesuit tradition.

Course Description
This course is designed to develop the students’ ability to integrate spreadsheets into the analysis of financial problems. Through this course, students will gain a conceptual as well as practical understanding of financial models and will be equipped with the spreadsheet skills needed to engage in financial modeling. Lastly, this course is aimed at establishing a foundation for analyzing “real-world” business problems and communicate model outcomes to aide in decision making.

Learning Objectives:
Upon successful completion of this class, you will be able to
• Apply a financial spreadsheet to a wide variety of financial models;
• Generate a forecast to predict future outcomes using various excel functions and regression modeling;
• Use simple excel database commands such as vlookup, hlookup, and build dynamic charts;
• Use excel finance functions including pv, fv, NPV, IRR;
• Build a business case; and
• Apply various excel add-ins to financial problems, including solver, and goal seek for scenario and sensitivity analysis.

Course Prerequisites
Prerequisite: FINC 600 and a working knowledge of Microsoft Excel

Method
This class is delivered online via Canvas.

Course Materials
1. Videos: All videos will be provided through canvas  
2. Excel Models: any managerial finance text (to be used as a reference).  
3. Canvas: We will use Canvas throughout the semester. Videos, Excel models, and assignments will be posted here. Please check it regularly.
Exams and Grades

Your course grade will be determined by your performance on homework assignments and performance on the business case. The weights will be assigned as follows:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
<th>Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework Assignments</td>
<td>(see below)</td>
<td>62%</td>
</tr>
<tr>
<td>Business Case</td>
<td>Week 8</td>
<td>28%</td>
</tr>
<tr>
<td>Discussion Board Participation</td>
<td>Throughout the course</td>
<td>10%</td>
</tr>
</tbody>
</table>

**Homework Assignment Policies:**
Late homework assignments will receive partial credit up to one week late.

Homework assignments are to be submitted via Canvas.

File Naming Convention – The spreadsheets that you submit must be named appropriately to receive credit. The file naming convention is A#LastnameTopic where A refers to the assignment, # is the actual module number (i.e. Module 1) followed by your last and Content helps you remember what the assignment covered. For example if you are submitting assignment #1, name it:

A1SmithForecastModel.xls

**If you do not name the file this way you will not receive credit.**

**Business Case**
The objective of the business case is to not only incorporate everything that you have learned in class, but present you with a “real-world” challenge to demonstrate your knowledge and overall business acumen.

**Self-Direction Aspect of the Class**
Some of you have strong finance skills. Some have strong Excel skills. Some have taken most of the Finance courses offered at Xavier while others have not. I will cover a wide variety of finance problems in a computing setting but will not always go into a lot of detail while covering the material. **You are responsible** for figuring out what you need to work on. It may be that you need to spend more time reading finance textbooks and supplemental readings or you may need to spend more time with an Excel handbook and Excel help menu or you may need to ask me more questions. Due to the wide variety of skills in the class I rely on you to determine what you need help on and will be glad to deliver it. I will provide links to resources throughout the course on Canvas that will help with both the financial aspect and the Excel aspect of this class.

**Software**
The spreadsheet package we will be using this semester is Microsoft Excel which is available on the machines in the computer labs.
Academic Misconduct
Xavier’s policy is detailed at:

http://www.xu.edu/registrar/ugrd_policies.html#Academic honesty

Miscellaneous Notes:

Although the only finance prerequisite for this course in FINC 600, the more finance, accounting, and information systems courses you’ve had, the more you will get out of the class. If you have had additional courses, I ask that you share your expertise with your classmates by assisting them with concepts and problems.

The recommended study/working time for this course is six (6) hours per week outside of class. Simply completing the course assignments will not guarantee you a good grade. That means reviewing, trying the techniques in other settings, brushing up on your finance knowledge and working through suggested exercises and practice sets. If you are unable or unwilling to make this sort of time commitment to this course, I recommend that you withdraw and take the class another time. Computer skills cannot be acquired by reading through assignments, watching someone else do them, or by cramming the night before an exam. You will learn by doing … and that will take time.

One of your goals for this class should be to improve your finance and spreadsheet skills beyond your current abilities. Some of you are very familiar with spreadsheets while others are not as familiar. Regardless of your current level of skill use this course as an opportunity to get better at using spreadsheets.

You will be expected to ask questions during class. An absence of questions will be taken as a sign of complete understanding. Take an active role in your education. If you do not understand how to do something, it’s up to you to take steps to remedy the situation.

Course Outline – The outline below is a rough outline of the semester. It is only an approximation and is subject to change.

There are 8 modules (1 per week) for this course, which will be made available every Monday. Homework for each module will be due that Sunday. For example, Module 1 will be available in Canvas on 3/13 and the homework is due by end of day (11:59pm EST) on 3/19.

<table>
<thead>
<tr>
<th>CLASS #</th>
<th>Date</th>
<th>Assignment Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3/13</td>
<td>Module 1 Generating Descriptive Stats</td>
</tr>
<tr>
<td>2</td>
<td>3/20</td>
<td>Module 2 Time Value of Money/Loan Schedule/Retirement Planning/NPV &amp; IRR</td>
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<tr>
<td>Module</td>
<td>Date</td>
<td>Topic</td>
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<tr>
<td>3</td>
<td>3/27</td>
<td>Module 3 Modeling &amp; Analysis of Financial Statements</td>
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<tr>
<td>4</td>
<td>4/3</td>
<td>Module 4 Forecasting Methods/Regression/Non Linear Modeling</td>
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<td>5</td>
<td>4/10</td>
<td>Module 5 Time Series Forecast Model</td>
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<tr>
<td>6</td>
<td>4/17</td>
<td>Module 6 Monte Carlo Simulation</td>
</tr>
<tr>
<td>7</td>
<td>4/24</td>
<td>Module 7 Computing WACC</td>
</tr>
<tr>
<td>8</td>
<td>5/1</td>
<td>Module 8 Discounted Cash Flow Modeling (DCF)</td>
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</tbody>
</table>
Finance Topic List

**This is an overview of the topics covered in this class, but is subject to change based on the feedback/questions from the class. The degree of attention for each topic will varying depending on the flow of the course.**

- Review of / introduction to Finance and Logical Functions in Excel
- Generating descriptive statistics
  - Built-in statistics functions
  - Data Analysis Toolpak
  - Autofilter and the Subtotal Function
- A Basic Financial Model – Loan Amortization
  - Spreadsheet structure
  - Building a general model
  - Blocking input errors with Data Validation
- Modeling Financial Statements
  - Preparing Pro Forma Financial Statements
  - Making a balance sheet “balance.”
- Building A Business Case
  - Forecasting free cash flow
  - Estimating the horizon/terminal value
  - ROI Metrics (i.e. NPV/IRR, PI, and Payback)
- Time Series Analysis and Forecasting
- Charting
  - Displaying financial information through graphs
  - Choosing the right chart
- Regression Analysis
  - Simple and multiple regression
  - Determining significance
  - Regression models in forecasting.
- Capital Budgeting
  - Building a flexible model
  - Sensitivity analysis using Data Tables
- Monte Carlo Simulation
  - Types of simulation models
  - Modeling risk
  - Simulation in a capital budgeting setting
  - Simulating financial statements
- Miscellaneous topics (time permitting)
Excel Topics

Here are some of the topics/functions that will be woven into the class during the course of the semester.

- Logical functions (IF, AND, OR)
- Lookup functions (VLOOKUP, HLOOKUP, OFFSET, INDEX, MATCH)
- Conditional functions (COUNTIF, COUNTIFS, SUMIF, SUMIFS, etc.)
- Finance functions (various as needed)
- Pivot Tables
- Forecast functions
- Regression Tool
- Solver and Goal Seek
- Array formulas
- Sorting
- Autofilter
- Charting
- Data Tables
- Statistics functions
- Date functions
- Ranking and ordering
- Naming conventions