BRMB 5240-01:
Financial Modeling for Business Decisions

Faculty: Professor Carlos De Mello e Souza (carlosms@seattleu.edu)
Office: Pigott 426, #5739
Class days and times: Tuesdays – 12:45 to 3:25 pm, CHDN 145
Office hours: Tuesdays – 12:00 to 12:45, CHDN 145
Tuesdays – 3:45 to 4:15, Pigott 426
Thursdays – 4:00 to 5:30, Pigott 426
or by appointment.

1. Objective

The objective of BRMB 5240 is to provide students with a palette of tools to formulate and solve quantitative decision-making problems—mostly in the fields of accounting, finance and economics—with the aid of computer software. Although students will develop models using Microsoft Excel, the concepts and techniques learned during the course are adaptable to other model building platforms. Decision-making approaches discussed during the course include mathematical programming (optimization) and the Monte Carlo method. Cases in financial analysis may cover topics such as preparation of pro-forma financials, budgeting, capital investment analysis and corporate valuation. Students who benefit most from BRMB 5240 enjoy analytics, have a strong dose of imagination, and are willing to tackle significant problems without simple or easy answers.

2. Materials

Required:


- Software: Microsoft Excel 2010, or later.

- A laptop computer is recommended for every class and is indispensable for taking the exam. If you don’t have a laptop computer, or if it is not convenient for you to bring one to class, please let me know and I will attempt to reserve one for you with the IT group.

Notes:

(1) If you own an Apple computer I recommend that you run Excel 2010 on Windows or use one of the school’s laptops.

(2) Even though many of the problems we will address can be solved using Excel 2003 or 2007, I recommend that you purchase a copy of Excel 2010 or later for home and school. Excel 2010 is installed in Albers School computers.
Highly recommended reading:

3. Grades

Performance evaluation will be based on (1) an exam, (2) homework assignments, and (3) a group term project. Assignments will be graded on scale between 0 and 100. The grade on missing or late assignments, including the exam is zero. Relative weights in the final grade are:

1. Homework (4) .................. 30 %
2. Exam ............................... 30 %
3. Term group project .......... 40 %

An approximate correspondence of letter grades with numerical scores is as follows: (The correspondence is approximate because I wait for significant gaps in ranked scores before changing letter grades.)

<table>
<thead>
<tr>
<th></th>
<th>&lt; 50</th>
<th>≥ 50</th>
<th>≥ 60</th>
<th>≥ 70</th>
<th>≥ 75</th>
<th>≥ 85</th>
<th>≥ 90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter</td>
<td>F</td>
<td>D</td>
<td>C-, C, C+</td>
<td>B-</td>
<td>B</td>
<td>B+</td>
<td>A-, A</td>
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</tbody>
</table>

I expect that you will come to class regularly, ready and willing to participate in exercises and discussions. Attendance and participation in class are not graded directly, but have a strong impact on the graded activities of the course. Office hours are not offered as a substitute for regular class attendance.

Homework is individual. Grading is based on turning it in (50%), apparent effort (30%), presentation quality (10%) and apparent correctness (10%). Homework is turned in from the course’s website. Name your homework files HW#N.firstName.lastName.xlsx. The first tab of the spreadsheet in which you present your solution should be a title page. Any extensive textual answers, including an explanation for how to use the spreadsheet, will be presented as an embedded Word document in the first tab as well. (Note: Presentation quality includes providing appropriate user instructions and developing a spreadsheet that is easy to understand.)

The exam will be taken with open books & notes. A make-up exam will be given only in the case of verifiable medical or family emergencies. Prior to the exam make sure your computer works, and that the battery has enough charge for the duration of the exam (or bring a cord). Diligence in homework assignments is fundamental for learning and for a good performance in the exam, which will draw on similar themes as homework questions at a similar or lower level of difficulty.

The term group project involves building an Excel-based model to solve a relevant business problem. Deliverables include a description of the problem that you want to solve and model logic diagram (5%), the Excel model (65%), a user guide with sufficient instructions so that another business student could understand the model and use it.
effectively (10%), and the results of tests showing that the model works as planned (10%). You will also present your model to the class orally on the day otherwise scheduled for the final exam (10%). In addition:

- Groups should be formed no later than the second class meeting. All groups will have exactly four members, except that if the class size is: (i) a multiple of 4 plus 1, then one group will have 5 members; (ii) a multiple of 4 plus 2, then two groups will have 5 members; (iii) a multiple of 4 plus 3, then one group will have three members.

- Each group shall develop a “contract” specifying what is expected from its members and how peer evaluations will reflect performance. Please submit to me a copy of your group’s contract, signed by all members, before the third class meeting.

- A summary description of what you plan to do must be submitted for approval by the instructor before the fourth week of the course. You may still change the project’s description after that point for good reason.

- Teams are allowed to expel members, and members are allowed to resign from their teams and form new teams anytime before the fifth class meeting.

- Projects can be based on problems you have faced at work, but they cannot be based on problems you have already solved at work using Excel, unless the new solution is significantly different and/or better than the one you had already developed. Submitting a project for grade that is a repetition of something you obtained at work (even if the original was developed by yourself) will be considered a violation of Seattle University’s code of academic honesty.

- All members of a group must be in attendance and actively involved in the discussion when their group is presenting. Absentee members will receive an “I” (incomplete) grade in the course. The “I” grade will be replaced by a definitive grade after the student presents the project to the instructor.

- Your final grade in the term project will reflect the average of your peer’s evaluations, combined with my own evaluation of your contribution. For example, if the paper deserves an A, but your contribution on average was rated 2 on a scale of 0 to 4, your grade in this report will be a C. If the paper deserves an A, your peers rate your contribution a 3, but I cannot see or obtain any evidence that you contributed to the project, your grade may still be a C or even a D. If you don’t contribute at all, your grade in the project will be zero. As soon as I notice that a student is NOT actively engaged, I will send an email message, and request a one-on-one meeting. Given the weight of the project in the final grade, it may be better to drop the course than to continue on if you cannot contribute to the group project.

Some examples of possible projects are:

- A financial planning model using VBA.
- A database management system for the Albers School journals list (ASIS).
- A multinomial logit model to predict journal rankings at the Albers School.
- A tool to estimate systematic risk (beta) for any given stock.
- A tool to estimate parameters of the Fama-French three-factor model.
- A real estate pricing model.
- A corporate planning and valuation model.
• Model to predict credit rating of a company as a function of financial statement and market data.

4. Honesty (PLEASE READ!)

I expect that you will abide by the University’s Academic Integrity Policy. “Seattle University is committed to the principle that academic honesty and integrity are important values in the educational process. Academic dishonesty in any form is a serious offense against the academic community.” (link: Academic Integrity Policy) If you are not sure about whether a particular action is acceptable according to this policy, you should check with me before engaging in it.

Since group work receives a single grade, academic dishonesty by any member of the group will affect the grades of all members of the team. This means it is your responsibility to check that work presented with your name on it abides by the University’s Code of Academic Integrity. If you are not sure, it is OK for you to submit your work independently of your group, and even to ask to be transferred to another group.

As required by University regulations I must report to the department’s chair all verified instances of plagiarism, cheating and usage of unauthorized sources in exams, papers, projects, homework or any other academic assignment. Depending on the severity and circumstances of the violation I may recommend that the student receive a grade of D or F in the course. According to University policy, “a single instance of plagiarism can be the basis for suspension or expulsion from our programs.” (Dean Joseph M. Phillips’ letter to students, November 2003.)

5. Conduct

I expect the highest level of professional conduct at all times. Reading of non-class materials must stop once class begins. Cell phones, pagers, MP3 players and similar devices must be turned off during class. Laptops, netbooks, iPads, PDAs and similar devices may be used for class-related activities, but please ask before video or audio recording any class session. Electronic devices other than your laptop computer must be turned off during the exam.

6. Scheduling

I have prepared a week-by-week tentative distribution of topics throughout the quarter. Please check the schedule for assignment deadlines, exam dates, and topics that we will cover in class each time we meet. I may adjust the schedule from time to time as the course progresses due to variations in the time needed to explain each topic. I will announce any scheduling changes by email and in class with sufficient time for you to prepare.

Office hours (listed above) are a great opportunity for you and I to discuss the course, career choices, or basically any other topic that you think I may be able to help you with. It is best to come to office hours regularly throughout the course, rather than just before an important deadline, because at that time many of your classmates may want to see me as well.
7. **Students with Disabilities**

If you have or think you may have a disability that interferes with your performance as a student in this class, I encourage you to arrange for special support and accommodations through the Disabilities Services staff at Seattle University’s Learning Center (Loyola 100, tel. 206-296-5740). Disability-based adjustments to course expectations can only be arranged through this process. You may also let me know at the beginning of the course so that I can make appropriate arrangements for you.

Class schedule begins on next page ➔
### 9. Tentative Class Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>For study</th>
<th>Deliverables</th>
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<tbody>
<tr>
<td>Mar 31</td>
<td>The art and craft of modeling (review of basic Excel skills)</td>
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<tr>
<td>Apr 07</td>
<td>Introduction to programming with VBA (I)</td>
<td>Ch 21, 24</td>
<td>Group memberships due.</td>
</tr>
<tr>
<td>Apr 14</td>
<td>Introduction to programming with VBA (II)</td>
<td>Ch 22</td>
<td>HW#1 Group contracts due.</td>
</tr>
<tr>
<td>Apr 21</td>
<td>Sub-routines and functions</td>
<td>Ch 23</td>
<td>Project descriptions due.</td>
</tr>
<tr>
<td>Apr 28</td>
<td>Databases</td>
<td>Ch 6</td>
<td>HW#2 Last day to change groups.</td>
</tr>
<tr>
<td>May 05</td>
<td>What-if, goal-seeking, simultaneous equations</td>
<td>Ch 7-8</td>
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<tr>
<td>May 12</td>
<td>Statistical analysis</td>
<td>Ch 9</td>
<td>HW#3</td>
</tr>
<tr>
<td>May 19</td>
<td>Forecasting financial statements</td>
<td>Ch 13</td>
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<tr>
<td>May 26</td>
<td>EXAM</td>
<td></td>
<td>HW#4</td>
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<tr>
<td>June 02</td>
<td>Time value of money (add valuation to forecasting model)</td>
<td>Ch 14</td>
<td></td>
</tr>
<tr>
<td>June 09</td>
<td>PROJECT PRESENTATIONS</td>
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</tbody>
</table>

**Note:** I assume you are familiar with basic Excel skills, such as are described in Chapters 3, 4 and 5 of the textbook. If this is not entirely true in your case, individual study and practice during the first eight weeks of the course should ensure that you will know that material before the exam. If you have questions or encounter difficulties while studying those chapters, please do not hesitate to come to office hours and ask for help.