

Managerial. Economics

Syllabus

Finance 321

Spring, 2004

Instructor: Pieter Vandenberg

◆ Course Objectives

This course is designed to provide you with a foundation in Managerial and Business Economics. It will deal mainly with the resource allocation decision(s) that a firm faces. Examples of the type of questions we will address include: How much to produce? What price to charge? How to produce the product? How and whether to substitute one input for another? We will also spend time on forecasting and model building.

The course is composed of four parts. The first part addresses the tools of

analysis and optimization. The second part deals with demand analysis and forecasting. The third section will deal with production and cost analysis. And the last section deals with the pricing decision. Upon the completion of this course you should have an understanding of the above four parts and be able to use the concepts and tools in arriving at managerial decisions. A particularly significant point to keep in mind, as you study the material, is the importance of the free market context within which these managerial decisions are made.

◆ Class Assignments

Class assignments consist of reading text material, homework from the end of the chapters, four computer modeling assignments, two midterm exams and a comprehensive final. All of these assignments will contribute toward your grade. The calendar section has the chapter reading assignments, dates of the exams, and all other assignments due dates. You should read the assigned chapters by the due date. We will not necessarily spend an equal amount of time on each chapter.

A very significant amount of learning takes place outside the classroom. The University believes that on average a student should be working two hours outside of class for every hour in class. (Thus taking 15 units would be a

45 hour work week!) Effective learning requires your participation. The more active you become in the learning process the more successful you will be. Arriving for class prepared, by reading the chapters and doing the assigned problems will allow you to be a more active learner. The grading system rewards you for coming to class prepared.

Also available are printed copies of the lecture projections I will use during class. Effective note taking does not involve writing down everything the instructor says. These printed lecture notes are designed so that you won't have to write down the displayed material. This will allow you to think more and write less during class periods. See page 8 for needed class materials.

Web Site:

www.vandenberg.info



◆ Homework

I will not collect the homework. Therefore you need only to have it completed for your personal use. Each period you will sign in on a roll sheet. At which point you will have the opportunity to say whether or not you are prepared to discuss the homework and the assigned readings for that particular day (i.e. have it completed) or are not prepared. If you are not prepared I will not call on you. *If you sign in prepared and are not your overall class grade will suffer very significantly since I consider this a breach of ethical behavior.* If you constantly sign in unprepared your homework grade will suffer. I will drop two days in computing your final homework average to allow for extenuating circumstances.

It is *not* necessary that you have the homework correct when you say you are prepared, it is necessary that you are able to carry-on a discussion which indicates that you have made a serious effort to complete the assignment. (Absence, arrival after the roll sheet has been passed out, or leaving early counts as unprepared.)

I do not give out check figures for the homework in advance because there are no check figures for the exams (or for problems that you will face after you leave college). Your homework grade will depend on whether or not you made a sincere attempt to work all the problems, if you do, you will find that you can work most problems or at least make substantial progress on them. If you do not prepare you will find that you will not benefit from much of the time we spend in going over the homework and the class material.

◆ Modeling Assignments

During the semester there will be several computer modeling assignments these will be based on homework problems. See below for a more detailed explanation of these assignments. The assignments must be done with a computer

model. You are free (encouraged) to work any remaining homework problems with the aid of a computer. But remember that you need to learn to work problems in a variety of ways. *Note that you cannot pass this course if the modeling assignments are not completed on time.*

◆ Exams

The exams will be made up of a variety of types of questions and problems ranging from multiple choice, to short essay, to problems. The

date for the exams are listed on the calendar. Please bring a Scantron sheet [Form 882 (recommended type), 882-60, or 20788] to each exam.

◆ The Grading Process

All of the work you do will be graded by me, *not* a grader. In addition you will receive regular reports on all of your grades. If you have a question about a grade please contact me at so that we may resolve it. The modeling and other assignments will not be returned so keep a copy for reference.

Weights

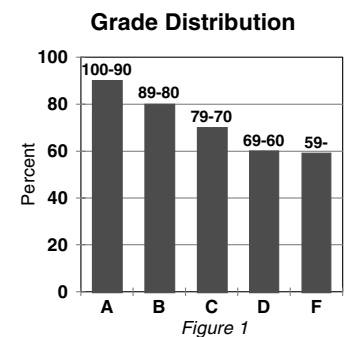
Exam 1	25%*	
Exam 2	25%*	
Final	25%*	<i>*You must complete these, on time, in order to receive a passing grade regardless of your overall average.</i>
Modeling Assignments	15%*	
Class Participation,		
Homework	10%	
Total	100%	

Final grade determination will be done using the schedule in Figure 1. If you are significantly above or below the mid point you will receive a plus or minus. These grades are an

absolute standard. If you achieve the above percentage on all of you work in *total*, then you are assured of getting that particular grade. I do not convert your scores on assignments into a grade

until the end of the semester. It is possible that you might still receive a higher grade than the above if you are very close to the cutoff line. Whether you receive the higher grade will depend upon a variety of individual factors such as:

the pattern of your exam grades during the semester, (do they go up or down) your performance on homework and your participation in class. Additional grading policies concerning the other possible grades (e.g. INC, WU) can be found at www.vandenberg.info.



January

Finance 321 Class Planning Calendar

					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	Introduction	21	M&M 1*	23	24
	25	26	M&M 2 {Prob 2-2,3}**	28	Web Chapter A*** {Prob A-7,8,9, 10,13}	30	31
			M&M 3, 3A First Modeling Assignment Due		{Prob 3-1,5,7,15}		

*M&M is the class text, "M&M 1" means to read chapter 1

**Means: Chapter 2, problems 2 and 3

***Link available on www.vandenberg.info

DECEMBER							FEBRUARY						
	1	2	3	4	5	6	1	2	3	4	5	6	7
7	8	9	10	11	12	13	8	9	10	11	12	13	14
14	15	16	17	18	19	20	15	16	17	18	19	20	21
21	22	23	24	25	26	27	22	23	24	25	26	27	28
28	29	30	31				29						

2004

S

M

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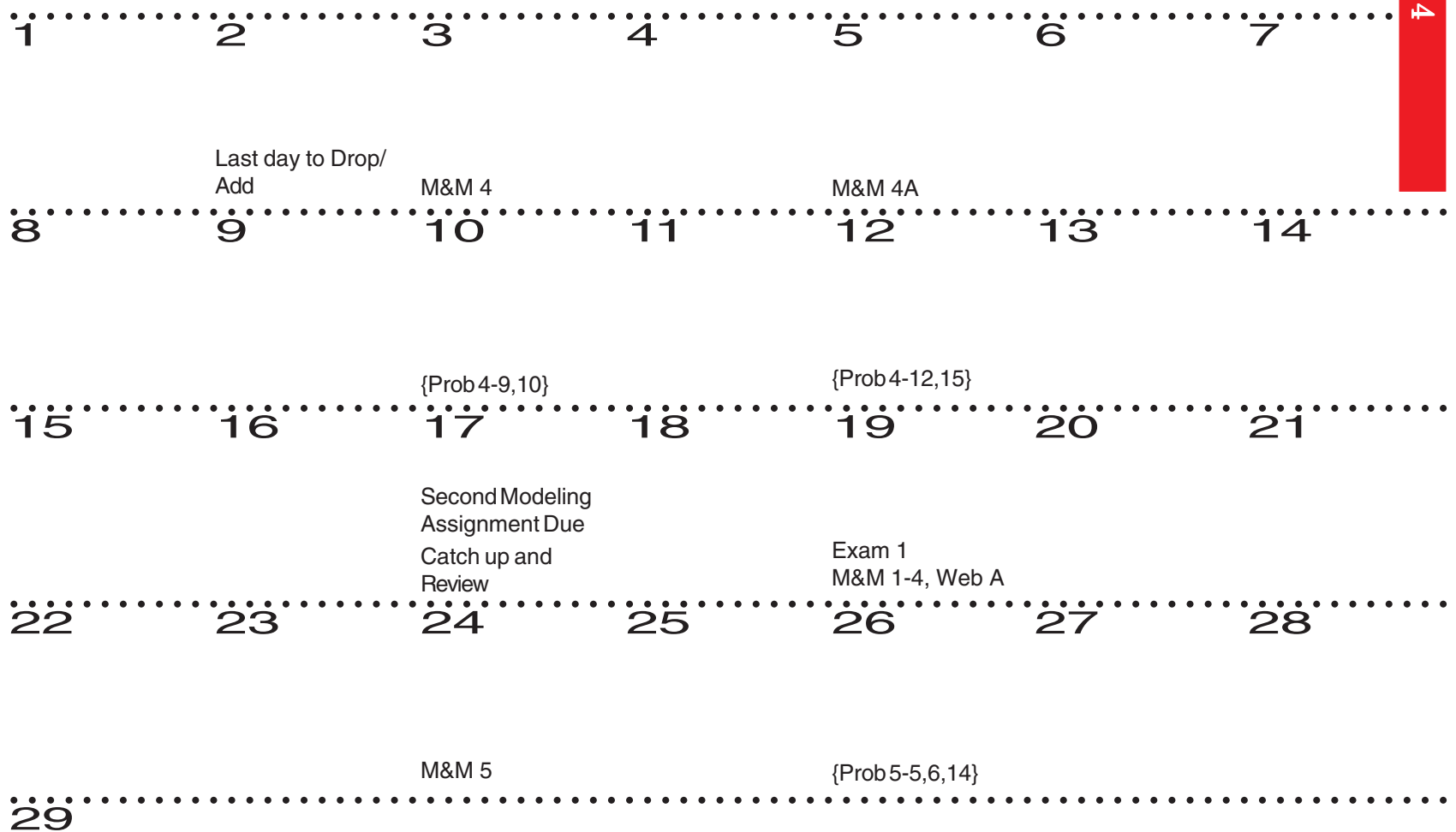
W

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F

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February



Finance 321
Class
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Calendar

JANUARY											MARCH					
1	2	3	4	5	6	7	8	9	10	11	1	2	3	4	5	6
12	13	14	15	16	17	18	19	20	21	22	7	8	9	10	11	12
23	24	25	26	27	28	29	30	31			13	14	15	16	17	18
											19	20	21	22	23	24
											25	26	27	28	29	30
											31					

March

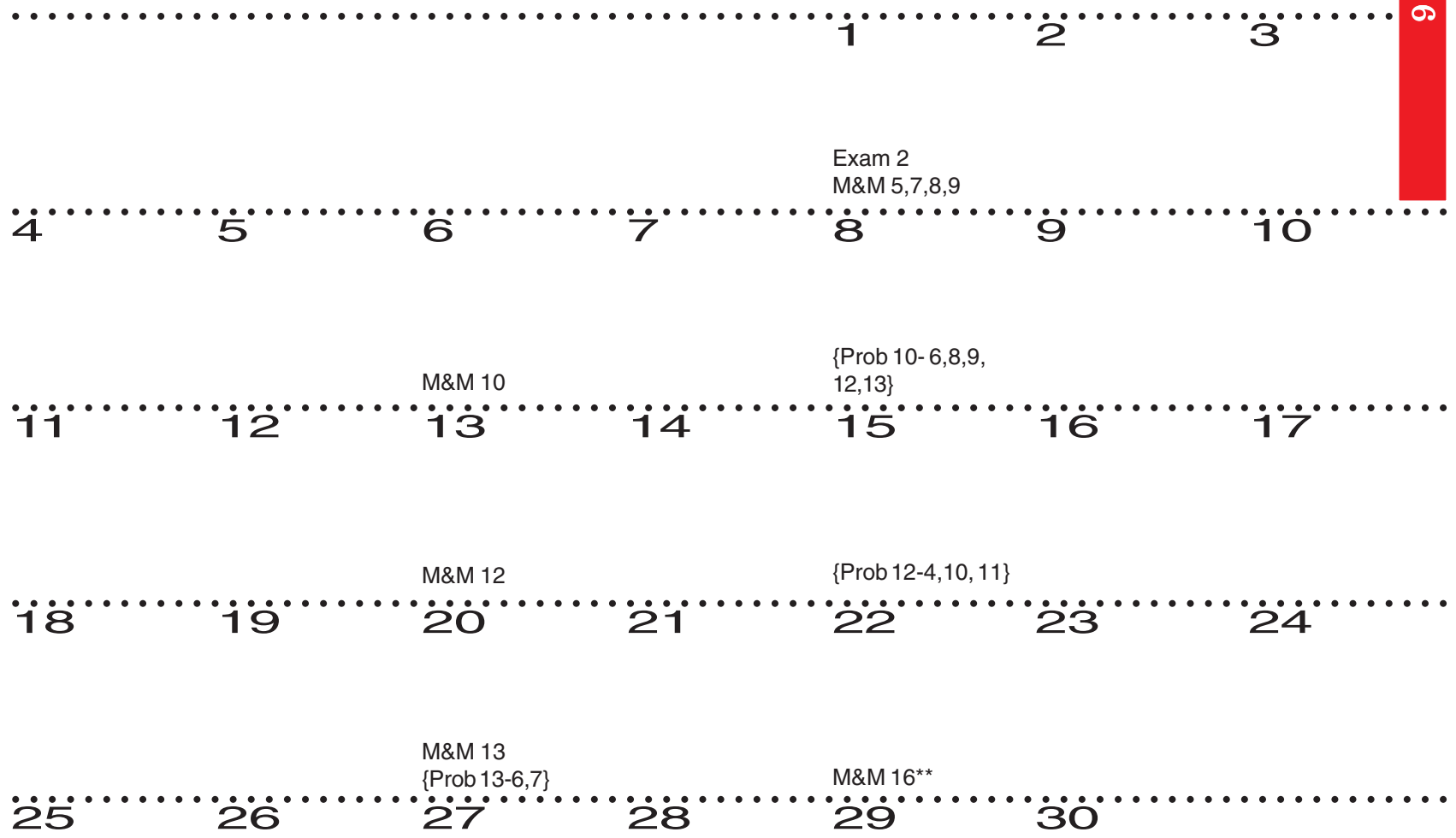
Finance 321
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	1	2	3	4	5	6	
	7	8	9 Third Modeling Assignment Due	10	11 M&M 7	12 We're half way!	13
	14	15	16 Prob 7-6,7,10,12}	17	18 M&M 8, 8A	19	20
	21	22	23 Vacation	24	25 Vacation	26	27
	28	29	30 {Prob 8-2,7} Fourth Modeling Assignment Due	31			
			Catch up and Review	Holiday			

** Read up to page 377

FEBRUARY							APRIL								
1	2	3	4	5	6	7					1	2	3		
8	9	10	11	12	13	14	4	5	6	7	8	9	10		
15	16	17	18	19	20	21	11	12	13	14	15	16	17		
22	23	24	25	26	27	28	18	19	20	21	22	23	24		
						29				25	26	27	28	29	30

April



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{Prob 16-5,8}

Review and
Catch up

** Read up to page 645

MARCH		MAY
1 2 3 4 5 6		1
7 8 9 10 11 12 13	2 3 4 5 6 7 8	
14 15 16 17 18 19 20	9 10 11 12 13 14 15	
21 22 23 24 25 26 27	16 17 18 19 20 21 22	
28 29 30 31	23 24 25 26 27 28 29	
	30 31	

Final is Tuesday, May 11 From 1:00 To 3:00

◆ Modeling Assignment Details

The following are the modeling assignments for this term. Please start working on them as soon as possible, so that if you have a problem you have time to obtain help.

<u>Number</u>	<u>Problems</u>
1	A-3,4 (Web Chapter)
2	4-2, 4A-3 (Appendix, page 180)
3	See next page
4	8-5,8,9

(For due dates see calendar)

You should answer all questions that are listed for each question, plus those listed below. You must turn in the solution requested by the instructions in the problem. You cannot simply use the computer as a printer. You must write a model to solve the problem. Your model must be documented by presenting a list of the equations and formulas used. Finally this assignment, like all others in this class, *is not* to be done as a group

project, assignments are to be done by the individual student.

The purpose of these assignments is to give you an opportunity to use tools that you should already be familiar with to solve problems, much the same as you will be expected to do when you leave here. In addition the third assignment requires you to use the library to find the necessary data. You should be familiar with the use of the library, if not you should be prepared to devote some extra time to learning this prerequisite skill.

Additional Questions

In addition to questions supplied in the textbook please answer the following questions. For *Problem 4-2*, plot the regression line along with actual data on one graph similar to Figure 4.5 on page 138. For *Problem 8-8* parts a and b plot the various functions requested. For part c use the solver function to find the minimum value.

◆ Which Spreadsheet?

You are free to do these assignments using any spreadsheet [e.g. Quattro Pro, Lotus, Excel, StarOffice, OpenOffice (Free download <http://www.openoffice.org/>).] If you have a "Works" type program you will probably not be able to complete these assignments. Do not use a statistical program such as SPSS or Minitab to complete any of these modeling assignments. Finally be careful in using the labs on campus, they frequently are a

source of viruses

Depending on your choice you may want to acquire a "how-to-book." These books will usually answer all of your questions, if you read them and follow the examples. Go to a bookstore and find one you like. You will find much better prices and selection if you go to a store away from campus. In general do not attempt to use software without a manual or resource material.

◆ Grading

In grading the modeling assignments I will assign a score between 0 and 4. Most individuals will receive a two (2) which means that you have, in general, done the assignment completely and competently. If you have some problems with your solution will you receive a one (1). If you turn in an assignment that is essentially a piece of paper, but does not complete the project you will receive a zero, meaning the assignment does not count.

If you make an obvious effort to complete the assignment it is unlikely that you will receive a zero. A three can be earned by doing a particularly

good job. This could be an innovative approach to the solution, and/or an extra effort in the quality of presentation or explanation. A four (4) is reserved for a rare event. Every once in a while someone does an extraordinary presentation. The numbers can be converted to a percentage by the following scale:

<i>Score</i>	<i>Grade</i>
0	00%
1	75%
2	85%
3	95%
4	100%

◆ The Fine Print

You are responsible for all assigned material and all classroom material whether you attend class or not. You cannot obtain material that you missed, because of absence, from the instructor (this includes notes, handouts, etc.). If it is necessary to miss a class you will

need to make arrangements with someone to obtain class material for you. It is a good idea to make these arrangements before you need them. Late assignments are not acceptable. All exams, assignments, and homework are expected to be your own original work.

◆ Modeling Assignment Three

Modeling assignment 3 requires that you obtain some data and then apply various forecasting techniques to the data. This assignment requires that you go through a complete forecasting cycle. You will have to obtain your own data, build the model(s), and make a judgement as to which model is best suited to make the forecast. You will be forecasting Sales and Net Income for an actual company. The only artificial aspects of this assignment is that an actual forecast would be based on a more complex modeling, using internal company data.

Obtaining the data.

You are to select a company for which you can obtain 20 periods of annual data or 32 periods of quarterly data of historical sales and net income. Be sure that data ends no earlier than fiscal 2003 (annual) or the 4th quarter of 2003 for quarterly data. You may not be able to find the data for a December fiscal year company, just choose a firm with an earlier ending fiscal year. The choice of a company is up to you, with one restriction—the *ticker symbol* for the company you choose must begin with the same letter as either your first or last name. The particular company you select is not important in doing this assignment successfully. If you have a problem selecting a company please see me.

The Analysis.

Write a very brief introduction that gives the name of the company, the ticker symbol, the major line(s) of business, and the source(s) of your data.

Then provide the following analysis:

- (a) Plot the sales and net income as time series data on one graph.
- (b) Estimate a trend equation [like Equation 5.5] for sales, as well as net income. Then forecast both for the next year (2004) or quarter (4th quarter of 2003) using the trend equation. Fully describe the equation you get and explain the statistical significance.
- (c) Plot net income vs. sales on one graph.
- (d) Estimate the relationship between net income and sales by using a regression. Forecast net income for the next period based on this equation (use as next period's sales the trend estimate you just made in part b). Fully describe the equation you get and explain the statistical significance.
- (e) Apply a 3 and 5 period moving average to sales and net income and forecast both for the next period. (*You may use table 5.4 as a guide if you wish, do not use the spreadsheet's pre-programmed functions for this or the next part.*)
- (f) Apply exponential smoothing to sales and net income using weights of both .3 and .7 and forecast both for the next period. (Use table 5.5 as a guide if you wish.)
- (g) Based on RMSE and any other facts, which forecasts, do you believe will do the best job? Why?

◆ Contacting Me

If you have a problem with any class assignment please contact me immediately so that we may discuss your situation. It might be possible to reach an accommodation with respect to class requirements and your particular situation. But problems do not improve with age! A successful resolution may not be possible if you delay in contacting me. You can always leave a phone or Email message, if all else fails, and then see me during my office hours.

I keep all of your exams and assignments that you turn in to me and you are welcome to come and discuss them. This term will go faster than you think. So please don't let problems pile up.

My office is in SS 3367. You can call me at (619) 594-3027. This number is on voice mail so you can leave a message 24 hours a day, every day. Or send Email to pieter.vandenberg@sdsu.edu (more effective). My office hours are from 2:30 to 3:30 PM Tuesdays and Thursdays; 4:00 to 4:50PM on Tuesday, and by appointment.

◆ Resource Material

The following are the resources I recommend you have access to:

TEXT: James McGuigan, Charles Moyer and Fredrick Harris, *Managerial Economics* (M&M) 9th Edition

NOTES: Pieter A. Vandenberg, *Managerial Economics Lecture Slides*

COMPUTER: Any spreadsheet and access to the Web including www.vandenberg.info