

WELCOME TO SPRING 2024 FIL 240

Dear Spring 2024 FIL 240 Section 3 Students,

I hope everyone is having an enjoyable break. Am pleased that you are signed up to take Section 3 of FIL 240 in the coming semester, and wanted to provide some information about the course. There is nothing you have to do before the semester begins, but knowing what to expect and being able to confirm that our section is right for you can be helpful.

First, we meet as a regular, traditional face-to-face course, not on-line, not hybrid, and will follow that plan unless unforeseen events cause ISU administration to tell us otherwise. Amid the Covid period's 2020 – 2021 involuntary remote learning experience most students said “we need to be face-to-face” for a course with considerable computational material like FIL 240, and I enthusiastically agree (*regular attendance is expected*). But some students seem ultimately to have liked at least some aspects of on-line learning, so we did not want to leave anyone wondering what our road map looks like.

Something I see as a benefit of our class is that it is much smaller, and thus a far nicer learning environment, than most of the FIL 240 sections. Our maximum enrollment is set at 35 (we are at 33 as of this writing), while the other sections are in rooms that hold 100 or more. I was an instructor for large, meaning 150 student and larger, sections of the FIL 240 course for 28 years; 2021-22 was my first year of reprieve. Either I am being rewarded for long service, or else the department chair thinks I have gotten too old to handle the large groups; either way I am happy to be working with you, and hope you are happy to be aboard. 😊

Another important issue is the textbook. You are encouraged (not required) to have access to an introductory business finance textbook. But because my own narrative outlines will be the basis for class discussions and I have written my own problem sets with detailed solutions for all applicable topics, you would use a textbook primarily for big picture background insights or more detailed explanations than the briefer outlines sometimes provide. (Some students like to print the outlines and bring them to class, others follow the discussions on their laptops – but *laptops and other devices are to be used during class only for our class purposes*, so we do not create distractions.) Looking through a textbook also gives you some assurance that what we cover is the usual material for the standard introductory finance course required by all accredited college business programs. In any case, you will not have to carry a textbook to class each day. If you already have access to an intro business finance textbook that a friend or relative used, that book will probably suit your needs. If you do not have such a book lying around and want to get one, I recommend the Gallagher text mentioned in the textbook note at the top of our course web site:

<https://about.illinoisstate.edu/jwtrefz/fil-240/>

Gallagher's text is a good book, and the downloadable version's \$39.95 price is hard to beat. And because we have our own outlines and problem & solution sets, I do not see a reason to pay for other study materials the publisher offers if you do decide to get the book. You certainly can get what you want to have, but school can be expensive, so it makes sense to save money on learning tools when you can. If I told you to get a \$250 book that you might not make much use of, I would feel very guilty. If I encourage you to have access to a book that might add value to your understanding and be a ready reference when needed, and those who do not already have one can get a \$40 download, I won't feel dreadfully bad even if you do not make much use of it.

(And the Gallagher book should be available on an ongoing basis; the publisher does not close the download window after the semester starts, so you can wait to get it closer in time to when you might feel you need it if a coming new semester requires careful spending.) I wanted to catch everyone before they started making unnecessary outlays when money may be tight.

All of our *written* materials are on the web site; a section for a sample topic is as follows:

Topic 8: Capital Structure (Text reading Ch. 13)

[240 Topic 8 Instructor's Outline](#) [Download](#)

[240 Topic 8 Problems](#) [Download](#)

See especially 1 & 2, and similar 5 & 6 for extra practice.

[240 Topic 8 Problems & Detailed Solutions](#) [Download](#)

(“Text reading” comments with Topics on the web site refer to the Gallagher book, but because introductory business finance books tend to cover the same general material it should be easy to identify appropriate chapters if you want to have a textbook and choose a different one.) The narrative outlines have a structure like the following:

Topic 10: Bonds (Copyright © 2023 Joseph W. Trefzger)

A bond is a document (a security) that provides evidence that money has been borrowed, usually for a long time period. Company managers borrow money by issuing long-term bonds because having some debt in the capital structure keeps the company's weighted average cost of capital in check – through the low interest rate paid if debt is used in moderation, and the ability to deduct interest payments when computing taxable income; recall Topic 5. And it is common for the managers to lock into an interest rate that will remain the same for many years so they can make long-term investment plans knowing, with certainty, the cost of the borrowed component within their WACC. (Companies borrow on a short-term basis by getting bank loans, or by issuing securities called “commercial paper” with maturities of one year or less.)

Why are bonds interesting to study? The type of bond we will focus on, with unchanging interest payments, becomes less attractive in a competitive market if the rate of return a lender would expect to earn on a similarly risky new loan increases. Imagine that five years ago XCorp issued \$1,000 bonds (it borrowed multiple \$1,000 units) and agreed to pay whoever holds each bond 6% of \$1,000, or \$60, in interest every year for 30 years, after which the \$1,000 was to be returned as well. Now five years later a sensible lender would expect an 8%

As noted earlier, some students like to print the outlines and bring them to class, others follow the discussions on their laptops – but again, laptops and other devices are to be used during class only for our class purposes. Some successful students take their own notes in class, saying it helps them to stay focused, knowing that they can always refer to the outlines later, and that is great – you should use all of our learning tools in ways that best support your own approach to learning. For each written homework exercise you are given detailed solutions to the assigned questions, with verbal explanations and complete computational steps; below is an example question from our big Topic 4 on the time value of money:

7. TLM Mutual Funds receives \$4,000 from Sharon, a fund investor, at the end of each year. TLM expects to credit every investor's account with a 6.5% compounded average annual rate of return. How much should TLM expect to owe Sharon after five years? What if instead she makes her \$4,000 contribution at the beginning of each year? Compute using individual year payment factors, annuity factors, and year-by-year breakdowns of all payments.

Type: *FV of Annuity; Total Unknown*. This problem is an annuity example, with a series of equal or related payments into or out of an account, and payments equally spaced in time. We could compound the cash flows individually, but with equal or related payments we can make use of the distributive property to facilitate the computations. Our equation for handling annuity situations is

$$\text{Payment} \times \text{Factor} = \text{Total} \quad \text{or} \quad \text{PMT} \times \text{FAC} = \text{TOT}$$

The payment PMT is the \$4,000 invested by the saver and received by the fund manager each year. This series of level cash flows corresponds in time value-adjusted terms, as every series of deposits or withdrawals must correspond in time value-adjusted terms, to a large lump sum of money (large in comparison to the payments). Here, this lump sum (TOT) will not exist intact until a future date, the end of year 5, so we have a future value of a level annuity problem, and our factor must be an FV of a level annuity factor (sum of a group of FV of \$1 factors). If the investment is made at the end of each year it is a level ordinary annuity and we use the FV of a level ordinary annuity factor:

$$\begin{aligned} \text{PMT} \times \text{FAC} &= \text{TOT} \\ \$4,000 [(1.065)^4 + (1.065)^3 + (1.065)^2 + (1.065)^1 + (1.065)^0] &= \$4,000 \left(\frac{(1.065)^5 - 1}{.065} \right) = \text{TOT} \\ \$4,000 \times 5.693641 &= \underline{\underline{\$22,774.56}} \end{aligned}$$

If the fund company receives the investment at the beginning of each year, it is a level annuity due and therefore we use the future value of a level annuity due factor:

$$\begin{aligned} & \$4,000 [(1.065)^5 + (1.065)^4 + (1.065)^3 + (1.065)^2 + (1.065)^1] \\ &= \$4,000 [(1.065)^4 + (1.065)^3 + (1.065)^2 + (1.065)^1 + (1.065)^0] [(1.065)] \\ &= \$4,000 \left[\left(\frac{(1.065)^5 - 1}{.065} \right) (1.065) \right] = \text{TOT} \\ & \$4,000 \times 6.063728 = \underline{\underline{\$24,254.91}} \end{aligned}$$

Videos of me talking through problems will be on Canvas. Generally they are the problems for which you will turn in written solutions for credit. You are asked to show all computational steps (the verbal commentary is not needed), and should try to work the assigned problems on your own before referring to the given solutions; we do not want the written homework to devolve into unthinking copying exercises.

For each spreadsheet problem you are given detailed instructions that can be followed if you are not comfortable coming up with your own solution that addresses all aspects of the stated question, and are shown what the output would look like for a sample set of input numbers; a snippet from the first spreadsheet problem is:

	A	B	C	D	E	F	G	H
1	[Student Name]							
2	Spreadsheet Problem 1: Time Value of Money (Retirement Savings)							
3								
4	Exercise involves someone who plans to deposit regular annual amounts into a retirement savings plan such as a Roth Individual							
5	Retirement Account (IRA). The deposits will increase in stages over time (with different levels in years 1-6, 7-30, and 31-40).							
6	He/she will make deposits on each birthday for 40 years (for example 25 through 65), and then retire one year after the last deposit							
7	is made (so interest will be earned on all deposits, including the final one).							
8								
9	INPUT SECTION							
10	Amount Deposited at Beginning of Each of Years 1 - 6				\$3,100.00			
11	Amount Deposited at Beginning of Each of Years 7 - 30				\$4,200.00			
12	Amount Deposited at Beginning of Each of Years 31 - 40				\$5,300.00			
13	Expected Average Annual After-Tax Rate of Return				4.35%			
14	Expected Number of Deposits				40			
15	Age When First Deposit Is Made				25			
16								
17	OUTPUT SECTION							
18	First, compute the expected total by finding the amount to which each individual deposit will grow by the retirement date (in Column F							
19	below). Then get the same total by adding the compounded values for the groups of related deposits (in Column G below).							
20								
21		Age at	Remaining			Value of	Sum of Values of	
22		Beginning	Years Until	Annual	Future Value	Deposit at	Equal Deposits at	
23	Year	of Year	Retirement	Deposit	Factor	Retirement	Retirement	
24	1	25	40	\$3,100.00	5.491590	\$17,023.93		
25	2	26	39	\$3,100.00	5.262664	\$16,314.26		
26	3	27	38	\$3,100.00	5.043282	\$15,634.17		
27	4	28	37	\$3,100.00	4.833044	\$14,982.44		
28	5	29	36	\$3,100.00	4.631571	\$14,357.87		
29	6	30	35	\$3,100.00	4.438496	\$13,759.34	\$92,072.01	
30	7	31	34	\$4,200.00	4.253470	\$17,864.58		
31	8	32	33	\$4,200.00	4.076158	\$17,119.86		
32	9	33	32	\$4,200.00	3.906236	\$16,406.19		
33	10	34	31	\$4,200.00	3.743398	\$15,722.27		
34	11	35	30	\$4,200.00	3.587349	\$15,066.86		
35	12	36	29	\$4,200.00	3.437804	\$14,438.78		
36	13	37	28	\$4,200.00	3.294494	\$13,836.87		
37	14	38	27	\$4,200.00	3.157157	\$13,260.06		

Also with the spreadsheet problems we ask that you think carefully about each cell formula rather than just mindlessly typing in formulas provided in the instructions. The spreadsheet problems, indeed everything we do in class, should have a strong critical thinking component. Feel free to look over the syllabus (link is near the top of the web page), outlines, and problem sets, but do not print anything out at this early date since I may be making small changes to some of the files on the web site before classes start, or even as the semester progresses.

Recommended alternative: Students who take ISU Finance courses beyond the 190/240 level are required to show proof of completion of the Excel “Crash Course” from *Wall Street Prep*. Cost of the course is \$39, and total time to complete all of the course sections and related exams is said to be 8 to 10 hours. Anyone who gets a certificate of completion for the Crash Course automatically gets 25 points in place of doing our spreadsheet assignments. All Finance and Business Administration (who take FIL 242) majors are strongly encouraged to earn the spreadsheet homework points by taking the Crash Course – you will have to do it before long anyway, so might as well do it now. The link for signing up with *Wall Street Prep* is

<https://www.wallstreetprep.com/self-study-programs/excel-crash-course/>

Finally, for exams you will need a calculator that can handle exponents and logarithms, but it can not be a graphing calculator or smart phone app or any other device that could become an electronic “cheat sheet” by allowing stored alphanumeric information to be retrieved. Once again, let’s not spend money needlessly. If you already have a basic scientific calculator it will probably meet your needs. If you have to buy something, a cheap and user-friendly scientific model is the Texas Instruments 30 xa (about \$10 at stores with competitive pricing). The most popular and user-friendly financial calculator is the Texas Instruments BA II Plus (\$32 or so if competitively priced), but you need not buy a financial calculator if ours is the only finance course you plan to take. In our introductory class we do not encourage the use of the financial calculator function key shortcuts in discussing the time value of money (I like to say: if you learn the main roads first your mental map will make the shortcuts easy to understand, but if you just learn the shortcuts and something goes wrong you will be hopelessly lost).

Please bring a current photo ID (ISU, or State of Illinois ID/driver’s license) to every exam.

We will make limited use of Canvas, an approach that worked well in recent semesters when issues arose with the Reggie Net system. (And our Canvas course site probably will not be published until about the time the semester starts.) We ask that you try to upload completed homework assignments to Canvas, and, as noted earlier, Canvas has videos of going through solutions to the written homework assignments (we may go over some of the problems in class as well, but recent past students have liked the flexibility the videos offer to those who want to go through problems at their own pace, or multiple times). **We will not likely use Canvas for reporting grades.** Some class members always have difficulty uploading assignments and must send them as e-mail attachments; if so Canvas will not have accurate point totals anyway. And students have generally said that the e-mailed grade reports I provide after each unit (exam and related homework) provide more detail than what they usually see with Canvas in other courses.

Grade Breakdown and Advice for Success

Activities that contribute points to the semester grade are as follows:

Office Visit (or phone call, try to do during first few weeks)	5 Points
Written Homework 1 (accounting, time value of money)	8 Points

Spreadsheet Problem 1 (retirement savings)	8 Points
Written Homework 2 (time value, capital budgeting)	8 Points
Spreadsheet Problem 2 (capital budgeting & pivot tables)	8 Points
Written Homework 3 (bond and stock valuation)	8 Points
Spreadsheet Problem 3 (bond valuation)	9 Points
Exam 1	78 Points
Exam 2	78 Points
Final Exam	<u>90 Points</u>
Semester Total	300 Points

Note that we are allotting a reasonable number of points to non-exam activities, and are having the written assignments due before the related exams to promote more effective studying.

FIL 240 is a participation sport, not a spectator sport. Best advice for succeeding in the course:

- Attend class regularly
- Keep up with the class on material; do not fall behind
- Read each outline carefully before we go over the related Topic in class, so that in class you are seeing it for a second time – when understanding often sets in
- *Work the assigned problems carefully* before (or at least shortly after) we cover the related material in class and/or you watch the related videos on Canvas; you can not simply read through the solutions or watch someone else work them – any more than you could become adept at a sport by just watching someone else play, and not actually practicing yourself
- Review the relevant outlines and review/rework important problems before each exam
- Visit the instructor (or call on the phone) when you have questions

So what have earlier students had to say about the course? Among the many complaints on recent semester evaluations were:

- Too much homework is due all at once, we should have regular assignments rather than being expected to do it all just before the exams.
- Everything that will not be on the exam is useless for the class and should be cut.
- There was a lot of teaching myself in this class.
- Instructor is weak with technology and uses old-fashioned teaching methods.
- There was nothing beneficial about this course.

My brief responses to the first four: we have you submit a full unit's worth of homework just before an exam primarily for students' convenience, but those with sensible plans work the practice problems as we cover the related material; a meaningful college course broadly covers the subject matter, and then an exam has questions on a sample of what was covered (we try to give solid guidance on what to expect on each exam); and in a computational course most students can learn effectively only by actively working the problems, which more than one student over the years has described as "having to teach myself" (what did they do in calculus?). And I am admittedly low-tech, but technology keeps changing, while knowing the foundational ideas has remained important for success in the financial realm as the technology changed from long division on paper to hand-held calculators to spreadsheets to supercomputers to AI.

It is nice to see that there were some supportive comments as well. They included:

- The homework problems prepared me extremely well for the exams.

- The full detailed explanations helped me understand the problems and retain the information for the tests.
- The videos of working the practice problems were really good.
- The course is challenging, but very rewarding if you put in the effort.

I would rather have you unhappy that I am hard-core about some things now and have you look back later and say the class was valuable, rather than to have you think I'm nice for being laid-back but then look back later and say FIL 240 was a joke. You want to stay engaged, and are paying me to help you do that. I spent far too much time in college decades ago doing short-term memorizing rather than actual learning (then ended up angry with myself and embarrassed in the working world that I did not understand some key ideas), and we want to take reasonable steps to help you avoid that kind of costly mistake.

I hope this introduction is helpful as you anticipate the coming semester. Please get in touch if you have questions. Let's put in the effort to have a great experience; I look forward to working with you once classes officially begin. Remember to stop by or call during the early part of the Spring term (or before classes start if you can catch me in; an office visit or phone chat, preferably early in the semester, is worth 5 points!). Office phone number, and office hours for once classes start, are shown on the syllabus (and office phone is shown below), and once the semester is under way I generally send e-mails on non-class days telling when I will be in. Let's get off to a good start. Stay safe and enjoy the rest of your time away from the routine.

Best regards,
Joe Trefzger
Professor of Finance, ISU
ISU office phone 309-438-2966