AGEC 3603 Spring 2020 Exam II 100 Points Possible

This exam is to be completed individually. Each of you will submit online both 1 Microsoft Word Document (with all answers required to be provided in Word clearly identified), and 1 Excel spreadsheet (with all of the components required to be completed in Excel clearly identified). For each of the major problems on the exam, there is obviously a lot of individual choice built in so the chance that any two individuals in the class will come up with exactly the same numbers is 0. In addition, we will be watching for spreadsheets that are structured exactly the same way, which would indicate that a template was created and subsequently shared with another student. Yes, the calculations will be the same, but every individual will need to develop their own spreadsheet and they will all look a little different.

1. Use your imagination to come up with two (2) different hypothetical capital investment projects based on the following criteria. Describe your projects in a Microsoft Word document. **(describe in word)**
   1. Project 1 will be a 7 year project. Assume a purchase cost in year 0, then come up with operating cash inflows and outflows for 7 subsequent years so that you can calculate a “net operating cash flow” for each year (can be positive or negative for each given year). Come up with a salvage value at the end of year 7 (can be zero if you want, just make it realistic) so that you can calculate a net total cash flow timeline for years 0 through 7. For project 1, tell me which of the 5 “categories” of capital investment your project would be and why.
   2. Project 2 will be a 5 year project. Assume a purchase cost in year 0, then come up with operating cash inflows and outflows for 5 subsequent years so that you can calculate a “net operating cash flow” for each year (can be positive or negative for each given year). Come up with a salvage value at the end of year 5 (can be zero if you want, just make it realistic) so that you can calculate a net total cash flow timeline for years 0 through 5. For project 2, tell me which of the 5 “categories” of capital investment your project would be and why.
2. Set both projects up in a single Excel spreadsheet. Clearly identify in your spreadsheet each of the following:
   1. Calculate the Payback Period for both projects 1 and 2. **(in Excel)**
   2. Calculate the Simple Rate of Return for both projects 1 and 2. (**in Excel)**
   3. Come up with an assumed “cost of debt” and an assumed “cost of equity” (whatever you want within reason as long as your numbers are consistent with what the relationship between cost of debt and cost of equity have to be). (**describe in Word, Program in Excel)**
   4. Calculate your own Weighted cost of Capital (WCC). **(in Excel)**
   5. Using your weighted cost of capital as the discount rate, calculate the Net Present Value of both your project 1 and project 2**. (in Excel)**
   6. Calculate the Annual Annuity Equivalent of the NPV’s for both project 1 and project 2. **(in Excel)**
   7. Calculate the Internal Rate of Return (IRR) for both your project 1 and project 2. **(in Excel)**
   8. Can you be confident that the IRR calculated for each of your individual projects is the only possible IRR for those respective projects? Why or Why Not (depending on your individual situation, your answers could be different for each of your respective projects)? **(in Word)**
   9. Based on your analysis, if you were charged with convincing a group of investors to put money into either your project 1 or your project 2, what would your sales pitch be? (write a short paragraph justifying your recommendation based on your analysis) **(in Word)**
   10. Explain (write a paragraph) how Tax policy and resulting choices (selection of tax depreciation method for example) can be used to either encourage, or discourage business investment in big ticket items and subsequently stimulate or slow down business activity in the U.S. Be specific in your answer to explain why depreciation policy matters and what the specific impacts can be related to capital investment analysis. **(in Word)**
3. Do the following with regard to the course material about lending.
   1. Describe what “default risk” is and what a lender can do to manage exposure to default risk. **(in Word)**
   2. Describe what “market risk” is and what a lender can do to manage exposure to market risk. **(in Word)**
   3. Set up a “level total payment” loan amortization table in Excel for a (pick a number between $75,000 and $250,000) fully amortized loan based on annual payments at (pick a number between 4 percent and 9 percent) stated initial annual percentage rate for (pick a whole number between 6 and 12) years. Include columns for **year, beginning principle, total payment, interest payment, principle payment and ending principle**. Set it up such that your entire table is filled in. **(in Excel)**
   4. Now assume that your lender deducted $4,000.00 in fees from your original loan amount in time period 0 to cover fees, filing costs, an appraisal, etc. (so in time period 0 you actually received $4,000.00 less than the beginning principle balance on your loan, whatever that is in your case). Calculate the Internal Rate of Return (IRR) of your loan cash flow stream after this deduction in the amount you actually receive. **(in Excel)**
   5. Now assume that at the end of year 4 (right after you made your 4th payment) the interest rate on your loan goes up by 2 percentage points (from whatever number you used originally). What is the new payment for the remainder of your loan? **(in Excel)**
   6. Final question: What is the biggest concern when there is a lot of “split financing” (farmers or others obtaining short-term financing from multiple sources including lots of “trade credit”) for a particular situation**? (Word).**

**HONOR CODE POLICY:** This is an open-notes/handouts exam. You may refer to any and all materials that I have provided to you in class or on CANVAS. However, I am placing you on your strict honor to do your own work and to not talk, discuss, collaborate, etc. with anyone else on this exam. Do not simply try to Google or Wiki all of the answers. I take honor as a serious privilege and responsibility. You should as well. It will catch up with you if you do not take honor and honesty seriously. Any breach of this policy that may come to my attention will result in a grade of “zero” for this exam for all parties concerned.