



COLORADO STATE UNIVERSITY  
— GLOBAL —

## FIN310: FINANCIAL ANALYTICS AND MODELING

**Credit Hours:** 3

**Contact Hours:** This is a 3-credit course, offered in accelerated format. This means that 16 weeks of material is covered in 8 weeks. The exact number of hours per week that you can expect to spend on each course will vary based upon the weekly coursework, as well as your study style and preferences. You should plan to spend 14-20 hours per week in each course reading material, interacting on the discussion boards, writing papers, completing projects, and doing research.

**Faculty Information:** Faculty contact information and office hours can be found on the faculty profile page.

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### COURSE DESCRIPTION AND OUTCOMES

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**Course Description:**

In this course, students apply the methodologies, techniques, and tools most commonly used in the analysis of financial data and creation of financial models. Drawing on methods of research from the fields of statistics, operations research, and information systems, students will use industry tools for visualization, inference, forecasting, and business optimization. The emphasis is on exposing the student to the techniques and software tools that are used in the industry to make informed financial decisions.

**Course Overview:**

This course will assist you in understanding the various tools and systems that can be used to analyze financial data and create effective models for analysis. Various models and techniques will be practiced, along with preparation of multiple templates that can be saved and used for real world analysis.

**Course Learning Outcomes:**

1. Use financial data to create visualizations.
2. Use industry tools to create financial models.
3. Forecast financial and operational key performance indicators.
4. Describe how financial models and forecasts can impact business decisions and drive performance.
5. Communicate implications of financial data on business operations.

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### PARTICIPATION & ATTENDANCE

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Prompt and consistent attendance in your online courses is essential for your success at CSU Global Campus. Failure to verify your attendance within the first 7 days of this course may result in your withdrawal. If for some reason you would like to drop a course, please contact your advisor.

Online classes have deadlines, assignments, and participation requirements just like on-campus classes. Budget your time carefully and keep an open line of communication with your instructor. If you are having technical problems, problems with your assignments, or other problems that are impeding your progress, let your instructor know as soon as possible.

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## COURSE MATERIALS

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### Required:

1. Mayes, T., Shank, T. (2018). Financial Analysis with Microsoft® Excel® 2016 (8th Ed.) Boston, MA: Cengage Learning. ISBN-13: 978-1-337-29804-9
2. Microsoft Excel software
3. Financial Calculator-HP 10bII+ Financial Calculator -OR- Texas Instruments BAII Plus Business Analyst

**NOTE:** All non-textbook required readings and materials necessary to complete assignments, discussions, and/or supplemental or required exercises are provided within the course itself. Please read through each course module carefully.

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## COURSE SCHEDULE

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### Due Dates

The Academic Week at CSU Global begins on Monday and ends the following Sunday.

- **Discussion Boards:** The original post must be completed by Thursday at 11:59 p.m. MT and Peer Responses posted by Sunday 11:59 p.m. MT. Late posts may not be awarded points.
- **Opening Exercises:** Take the opening exercise before reading each week's content to see which areas you will need to focus on. You may take these exercises as many times as you need. The opening exercises will not affect your final grade.
- **Mastery Exercises:** Students may access and retake mastery exercises through the last day of class until they achieve the scores they desire.
- **Critical Thinking:** Assignments are due Sunday at 11:59 p.m. MT.
- **Live Classroom:** Although participation is not required, Live Classroom sessions are held during Week 3 and Weeks 6. There are two total sessions.

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## WEEKLY READING AND ASSIGNMENT DETAILS

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### Module 1

#### Readings

#### Required

- Chapter 1 in *Financial Analysis with Microsoft® Excel® 2016* (8th Ed.)
- Kommer, R. (n.d.). Excelling in business: 10 Excel functions every business leader should know. Retrieved from <https://smallbusiness.yahoo.com/advisor/excelling-business-10-excel-functions-every-business-leader-041525463.html>

- Rosenberg, E. (2019). The importance of Excel in business. Retrieved from <https://www.investopedia.com/articles/personal-finance/032415/importance-excel-business.asp>

### **Opening Exercise (0 points)**

### **Discussion (25 points)**

### **Mastery Exercise (10 points)**

### **Portfolio Milestone (0 points)**

A final Portfolio Project is due at the end of the course. You have two options from which to choose for this final project. This week, you should review the Portfolio Project options in Module 8 and the Portfolio Project grading rubric. Keep in mind that you have two preliminary deliverables for your Portfolio Project in Module 3 and Module 5.

## **Module 2**

### **Readings**

#### **Required**

- Chapter 2 in *Financial Analysis with Microsoft® Excel® 2016* (8th Ed.)
- What are Financial Statements? (n.d.). Retrieved from <https://accounting-simplified.com/financial/statements/types.html>

### **Opening Exercise (0 points)**

### **Discussion (25 points)**

### **Critical Thinking: Creating Common Size Statements (75 points)**

#### **Option 1: Winter Park Web Design**

Open the data file from [www.cengagebrain.com](http://www.cengagebrain.com) named “Chapter 2 Problem 3. xlsx” for this chapter.

1. Complete the financial statements for Winter Park Web Design using formulas. Some of these formulas will require links to other data in other worksheets in the workbook.
2. Create a common size income statement and balance sheet using the information from your Excel workbook. Use techniques you have learned in the text reading to complete this task.

Submit the Excel workbook.

#### **Option 2: Common-Sized Financial Statements**

Go to [www.atomfinance.com](http://www.atomfinance.com). Enter the name of a company (or ticker symbol) of your choice in the search box, click FINANCIALS in the menu on top, and locate the income statement and balance sheet. Find the most recent year and complete the following tasks using that data. .

1. On the page that appears, click on the link for the Income Statement and copy the data to a new worksheet (you may need to manually type it in to an Excel workbook). Reformat the data so it is more readable and insert formulas in place of the numbers where possible.
2. Repeat to create a balance sheet.
3. Create a common-size income statement and balance sheet based on the data from parts 1 and 2.

Submit the Excel workbook.

## **Mastery Exercise (10 points)**

### **Module 3**

#### **Readings**

##### **Required**

- Chapter 3 in *Financial Analysis with Microsoft® Excel® 2016* (8th Ed.)
- Kenton, W. (2019, August 30). Ratio analysis. Retrieved from <https://www.investopedia.com/terms/r/ratioanalysis.asp>

## **Opening Exercise (0 points)**

## **Discussion (25 points)**

## **Live Classroom (0 points)**

## **Mastery Exercise (10 points)**

### **Critical Thinking: Title (70 points)- The Value of Ratio Analysis**

#### **Option 1: What Ratios Tell You**

Using the same company you used in your discussion post, set up a ratio worksheet similar to Exhibit 3-6, page 92 of the text. Calculate all of the ratios for your chosen company.

1. Identify and discuss two areas of concern, and two areas of improvement.
2. Note the ROE and explain any changes using the DuPont method from equation (3-29) and the extended DuPont method from equation (3-33).
3. Calculate the economic profit and compare it to net income.

Submit your Excel workbook and a Word document discussing your findings, including the areas of concern, the differences in the ROE using the various methods and the comparison of economic profit to net income. Include any resources utilized in your analysis.

NOTE: to find the necessary information to complete this problem, go to [www.sec.gov/edgar/searchedgar/companysearch.html](http://www.sec.gov/edgar/searchedgar/companysearch.html) and retrieve data for your company by entering either the name or ticker symbol in the search box. Then, enter 10-K in the Filing Type box and click on the Search button. Click the Interactive Data button next to the most recent 10-k (annual report) and then select Financial Statements in the menu on the left side. Choose Consolidated Statement of Operations (the income statement) and paste this data into your worksheet. The data will be pasted in HTML format and a Smart Tag will appear that will allow you to either “Keep Source Formatting” or “Match Destination Formatting”. Try both, to see which one you like best, noting that you will need to reformat either way. Repeat these steps for the Consolidated Statement of Financial Position (balance sheet).

#### **Option 2: Filling in the Ratio Blanks**

Using the data for Mike Owjai Finance in Problem 2, page 101 of your text complete the following tasks:

1. Create a workbook with the balance sheet and income statement information provided. Note it is incomplete, requiring calculations and analysis to complete.
2. Where the word “RATIO” exists in the financial statements, data is missing. Using the Ratio and Value in part A of the problem to fill in those spaces.

3. Complete the financial statements by using formulas that refer to existing data to fill the remaining spaces noted by "Formula:."

Submit your Excel workbook for grading. Also include a written document 1-2 pages in length summarizing the process used to determine the ratios provided limited information.

### **Portfolio Milestone (50 points)**

Pick a company of interest to you from either [www.atomfinance.com](http://www.atomfinance.com) or [www.morningstar.com](http://www.morningstar.com). Bookmark the company page for reference. Submit a 1-2 page summary of the company you chose, including the industry, why you picked this company, and any other basic information about the company.

## **Module 4**

### **Readings**

#### **Required**

- Chapter 4 in *Financial Analysis with Microsoft® Excel® 2016* (8th Ed.)
- Tuovila, A. (2019). Cash budget. Retrieved from <https://www.investopedia.com/terms/c/cashbudget.asp>
- Zamfir, M. (2018). The cash budget - A short-term forecast tool for the financial statements of economic entities. *Ecoforum*, 7(2).

### **Opening Exercise (0 points)**

### **Discussion (25 points)**

### **Mastery Exercise (10 points)**

#### **Critical Thinking: Title (75 points)-Cash Budgeting**

##### **Option 1: Balancing Cash and Short Term Borrowing**

Lakewood Laser SkinCare's ending cash balance as of January 31, 2018 (the end of its fiscal year 2017) was \$15,000. Its expected cash collections and payments for the next six months are given in the table in Problem 1, page 133 in your text assignment.

- a. Calculate the firm's expected ending cash balance for each of the months.
- b. Assuming that the firm must maintain an ending cash balance of at least \$12,000, how much must they borrow each month?
- c. If the firm must pay 5% annual interest on its short-term borrowing, what are your ending cash balances for each month?
- d. What are the ending cash balances if the firm uses any cash in excess of the minimum to pay off its short-term borrowing in each month?
- e. NOW, go back and assume they require a balance of \$10,000 each month and pay 8% annual interest on its short-term borrowing. What difference does this make in the cash budget?
- f. What differences would the change in required cash and interest make in their overall cash picture? What might you suggest as ways to improve their cash budget?

Submit your Excel workbook and a written summary of the data analysis.

## Option 2: Creating the Cash Budget

Using the data for Loblaw Manufacturing in problem 2 on page 122 of your text, complete the following:

- a. Create a cash budget in Excel for June to October, 2017. The cash budget should account for short-term borrowing and payback of outstanding loans as well as the interest expense. Assume the firm ended May with a \$30,000 unadjusted cash balance.
- b. Use the Scenario Manager function in Excel to determine the effect of stretching out inventory payments, rather than borrowing from the bank. Determine the total interest costs for this time period if the company paid 0%, 10%, 30% or 40% of its inventory purchases in the same month, with the remainder being paid the following month. Create a scenario summary and describe whether the company would save money extending inventory payments rather than borrowing from the bank.

Submit your Excel workbook and a written analysis of your findings.

## Module 5

### Readings

Required:

- Chapter 5 in *Financial Analysis with Microsoft® Excel® 2016* (8th Ed.)
- Campbell, P. (2017). *The benefits of a reliable financial forecast*. In *A Quick Start Guide to Financial Forecasting : Discover the Secret to Driving Growth, Profitability, and Cash Flow Higher* (pp. 29-46). Ashland, UNITED STATES: Grow & Succeed Publishing LLC.
- *Investopedia stock analysis: Regression basics for business analysis* (2018). Chatham: Newstex.

### Opening Exercise (0 points)

### Discussion (25 points)

### Mastery Exercise (10 points)

### Critical Thinking: Title (75 points)-Methods of Forecasting

#### Option 1: Percent of Sales Forecasting

Go to [www.atomfinance.com](http://www.atomfinance.com) and select a company of your choice to evaluate. Using the financial data tab, transfer the information from the income statement for at least two years to a new Excel workbook. Use the exhibit 5-2 on page 143 of your text as an example. Calculate the Percent of Sales Forecast for the subsequent year in column B of your spreadsheet.

1. Submit the spreadsheet.
2. Submit a 1-2 page summary of your findings. Include the definition and purpose of using the percent of sales forecasting method. Also include ideas regarding other important statistical calculations or forecasts that would help with decision making.

#### Option 2: Discretionary Financing for Growth

Go to [www.atomfinance.com](http://www.atomfinance.com) and select a company of your choice to evaluate. Using the financial data tab, transfer the information from the balance sheet for at least two years to a new Excel workbook. Use the exhibit 5-3 on page 148 of your text as an example. Calculate Discretionary Financing Needed (DFN) based on your forecasted balance sheet created in column B of your spreadsheet.

1. Submit your spreadsheet.

2. Submit a 1-2 page summary of your findings. Include the definition of DFN, and why it is important as a component of corporate growth. What other calculations or forecasts would be helpful to make growth decisions and financing decisions.

### **Portfolio Milestone (50 points)**

In module 3 you prepared a summary of your chosen company. Now, bring the most recent 2 years of financial statements into Excel. Create a workbook with separate sheets for the comparative balance sheet, income statement and statement of cash flow. Create a list of ratios you plan to perform on your data, and a 1-2 page summary of why you feel those ratios are important and what you hope to learn from the analysis. Submit your preliminary Excel workbook and Word summary.

## **Module 6**

### **Readings**

#### **Required**

- Chapter 6 in *Financial Analysis with Microsoft® Excel® 2016* (8th Ed.)
- Campbell, P. (2017). *The 10 rules for creating a forecast you can trust*. In *A Quick Start Guide to Financial Forecasting : Discover the Secret to Driving Growth, Profitability, and Cash Flow Higher* (pp. 47-68). Ashland, UNITED STATES: Grow & Succeed Publishing LLC.

### **Opening Exercise (0 points)**

### **Discussion (25 points)**

### **Live Classroom (0 points)**

### **Mastery Exercise (10 points)**

### **Critical Thinking: Title (75 points)-Trends in Company Sales**

#### **Option 1: Trends in Retail**

Go to [www.cengage.com](http://www.cengage.com) and log in to your account. Go to the student resources for Chapter 6 of your text. Download the data file Revenues.xlsx. Using the data for TGT (Target Corp) quarterly sales data, complete the following tasks:

1. Create a line chart of sales. Is there a trend? Do you notice seasonality? If so, what is the frequency?
2. Using the procedures you learned in the text, chapter 6, decompose the time series into the trend, seasonality, and irregular components.
3. Which of the time series methodologies discussed in the chapter would likely be the most appropriate for forecasting Target's sales?

Submit your Excel workbook. Submit a 1-2 page paper summarizing your answers to questions 1-3, using references, formatted according to the CSU Global Citing and APA Requirements, to support your conclusions.

#### **Option 2: Trends in Healthcare**

Go to [www.cengage.com](http://www.cengage.com) and log in to your account. Go to the student resources for Chapter 6 of your text. Download the data file Revenues.xlsx. Using the data for UNH (UnitedHealth Group) Quarterly Sales, complete the following tasks:

1. Create a line chart of sales. Do you notice any trends?
2. Do you see any seasonality? If so, what is the frequency and what quarter typically has the highest sales?
3. Create a forecast for UnitedHealth Group's sales for December 2016 using the SES model.

4. Create a forecast for UnitedHealth Group's sales for December 2016 using the LES model.

5. Which of the two models fits the data better based on MSE?

Submit your Excel workbook showing your work to answer the questions above. Include a 1-2 page summary explaining your findings, including references, formatted according to the CSU Global Citing and APA Requirements, to support your conclusions.

## **Module 7**

### **Readings**

#### **Required**

- Chapter 7 in *Financial Analysis with Microsoft® Excel® 2016* (8th Ed.)
- Campbell, P. (2017). *The recipe for financial forecasting*. In *A Quick Start Guide to Financial Forecasting : Discover the Secret to Driving Growth, Profitability, and Cash Flow Higher* (pp. 69-86). Ashland, UNITED STATES: Grow & Succeed Publishing LLC.
- Lee, R. T. (2016). Fixed and variable costs: When accounting is the opposite of cash flow reality. *Journal of Corporate Accounting & Finance (Wiley)*, 27(4), 31–35.

#### **Opening Exercise (0 points)**

#### **Discussion (25 points)**

#### **Mastery Exercise (10 points)**

#### **Portfolio Reminder (0 points)**

Continue the analysis of your chosen company. Add EBIT, DFL, DOL and DCL to your calculations. These can be included on a separate worksheet within your Excel workbook. Begin to prepare your summary of findings, review the ratios and processes you have already completed, and determine if additional steps need to be taken before finishing your project for submission.

## **Module 8**

### **Readings**

#### **Required**

- Chapter 16 in *Financial Analysis with Microsoft® Excel® 2016* (8th Ed.)
- Campbell, P. (2017). *A real world example-ABC construction company*. In *A Quick Start Guide to Financial Forecasting : Discover the Secret to Driving Growth, Profitability, and Cash Flow Higher* (pp. 87-122). Ashland, UNITED STATES: Grow & Succeed Publishing LLC.

#### **Opening Exercise (0 points)**

#### **Discussion (25 points)**

#### **Mastery Exercise (10 points)**

#### **Portfolio Project (250 points)-Analysis of Company Data**

Option 1: Analysis of Service Sector Company Data



Choose a company in the service sector that is of interest to you from either [www.atomfinance.com](http://www.atomfinance.com) or [www.morningstar.com](http://www.morningstar.com). For your portfolio project you will be using the skills and techniques you learn in this course to assess and analyze the financial health of your chosen company.

Your final project submission will include:

- A. An Excel workbook containing the following:
  - 1. 2 years of most recent financial statements.
  - 2. A list of 6-10 ratios you plan to perform on your data and the importance of each.
  - 3. The EBIT, DFL, DOL and DCL calculations.
  - 4. Pivot tables and charts to effectively present your data and findings.
- B. A 3-5 page written document with a summary of your findings not including the title and reference pages.
- C. A 6-10 slide PowerPoint presentation suitable to show a client or employer including the details of your findings that will be helpful for their decision making. Add notes in the notes pages of the slides indicating your presentation discussion. Do not count the title and reference slides in your slide count.

Include your resource list in APA format with at least 4 references (at least 3 of which are scholarly/peer reviewed) formatted according to the CSU Global Citing and APA Requirements in your written document and your PowerPoint presentation for tips on. For tips or assistance with your paper visit the CSUG-Global Writing Center. For tips on creating presentations visit the CSU Global Writing Center Visual Presentation page.

#### Option 2: Analysis of Manufacturing Sector Company Data

Choose a company from the manufacturing sector that is of interest to you from either [www.atomfinance.com](http://www.atomfinance.com) or [www.morningstar.com](http://www.morningstar.com). For your portfolio project you will be using the skills and techniques you learned to assess and analyze the financial health of the company.

Your final project submission will include:

- A. An Excel workbook containing the following:
  - 1. 2 years of most recent financial statements.
  - 2. A list of 6-10 ratios you plan to perform on your data and the importance of each.
  - 3. The EBIT, DFL, DOL and DCL calculations.
  - 4. Pivot tables and charts to effectively present your data and findings.
- B. A 3-5 page written document with a summary of your findings not including the title and reference pages.
- C. A 6-10 slide PowerPoint presentation suitable to show a client or employer including the details of your findings that will be helpful for their decision making. Add notes in the notes pages of the slides indicating your presentation discussion. Do not count the title and reference slides in your slide count.

Include your resource list in APA format with at least 4 references (at least 3 of which are scholarly/peer reviewed) formatted according to the CSU Global Citing and APA Requirements in your written document and

your PowerPoint presentation for tips on. For tips or assistance with your paper visit the CSUG-Global Writing Center. For tips on creating presentations visit the CSU Global Writing Center Visual Presentation page.

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## COURSE POLICIES

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Grading Scale	
A	95.0 – 100
A-	90.0 – 94.9
B+	86.7 – 89.9
B	83.3 – 86.6
B-	80.0 – 83.2
C+	75.0 – 79.9
C	70.0 – 74.9
D	60.0 – 69.9
F	59.9 or below

### Course Grading

20% Discussion Participation

0% Opening Exercises

0% Live Classroom

8% Mastery Exercises

37% Critical Thinking Assignments

35% Final Portfolio Project

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## IN-CLASSROOM POLICIES

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For information on late work and incomplete grade policies, please refer to our [In-Classroom Student Policies and Guidelines](#) or the Academic Catalog for comprehensive documentation of CSU Global institutional policies.

### Academic Integrity

Students must assume responsibility for maintaining honesty in all work submitted for credit and in any other work designated by the instructor of the course. Academic dishonesty includes cheating, fabrication, facilitating academic dishonesty, plagiarism, reusing /repurposing your own work (see *CSU Global Guide to Writing and APA Requirements* for percentage of repurposed work that can be used in an assignment), unauthorized possession of academic materials, and unauthorized collaboration. The CSU Global Library provides information on how students can avoid plagiarism by understanding what it is and how to use the Library and Internet resources.

### Citing Sources with APA Style

All students are expected to follow the *CSU Global Guide to Writing and APA Requirements* when citing in APA (based on the APA Style Manual, 6th edition) for all assignments. For details on CSU Global APA style, please review the APA resources within the CSU Global Library under the “APA Guide & Resources” link. A link to this document should also be provided within most assignment descriptions in your course.

### Disability Services Statement

CSU–Global is committed to providing reasonable accommodations for all persons with disabilities. Any student with a documented disability requesting academic accommodations should contact the Disability Resource Coordinator at 720-279-0650 and/or email [ada@CSUGlobal.edu](mailto:ada@CSUGlobal.edu) for additional information to coordinate reasonable accommodations for students with documented disabilities.

**Netiquette**

Respect the diversity of opinions among the instructor and classmates and engage with them in a courteous, respectful, and professional manner. All posts and classroom communication must be conducted in accordance with the student code of conduct. Think before you push the Send button. Did you say just what you meant? How will the person on the other end read the words?

Maintain an environment free of harassment, stalking, threats, abuse, insults or humiliation toward the instructor and classmates. This includes, but is not limited to, demeaning written or oral comments of an ethnic, religious, age, disability, sexist (or sexual orientation), or racist nature; and the unwanted sexual advances or intimidations by email, or on discussion boards and other postings within or connected to the online classroom. If you have concerns about something that has been said, please let your instructor know.