



BUSINESS SCHOOL
Te Kura Pakihi

COURSE OUTLINE

ACFI 299 ***Special Topic: Introduction to Accounting*** ***Analytics***

Summer School, 2021

This course outline contains information specific to this paper. For more general information common to your papers, please refer to the [COMMERCE_UG_2018: Commerce Undergraduate Students site on Blackboard](#).

Paper Description and Aims

Accounting analytics involves evaluating accounting and related data to address business questions using analytical tools, statistical methods and decision processes.

The aims of this course are (a) to equip students with an understanding of how financial and non-financial data can inform accounting and business decisions and (b) to develop analytical skills and techniques that can capture, analyse, and interpret data in order to obtain valuable insights in an accounting and auditing context.

Learning Outcomes

Upon successful completion of this paper, you should be able to:

1. Develop an accounting analytic mind-set.
2. Extract, transform, and prepare accounting data for further analysis using data analytics tools.
3. Demonstrate competence in using data analytics tools such as Excel, Power BI and SPSS software to accounting analytics problems.
4. Apply visualisation techniques to interpret and communicate the results of accounting related analysis.
5. Apply statistical techniques to examine company and industry trends and unusual patterns in accounting data, interpret and communicate the results to appropriate audiences.

Teaching Staff

Paper Co-Coordinator

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Office Hours: Tuesday 9-10am and Thursday 9-10am

Class Representatives

Class representatives are an important means of communication between students and staff. Contact details for your student class representatives can be found on the Blackboard page for this paper.

Course Delivery

Lecture Day/Time: Tuesday and Thursday 10-12 Computer Lab OBS118
Tuesday and Thursday 14:00-16:00 Computer Lab NCAL

Students are encouraged to attend all classes each week. If a student misses a class it is their responsibility to catch up on what happened during the class and take steps to learn the material.

Caution: It is essential that students attend every class due to the nature of the course. During lab classes, students learn by doing various tasks designed to develop their skills. A student missing a class should not expect extra help during subsequent lab classes.

The course is structured into three complementary modules, namely, an Excel Module, and a Statistical Analysis Module and a Power BI Module. As three modules are complementary, the skills developed in one module will be essential to smoothly progress in to the other modules. Accordingly, students are encouraged to focus on achieving detailed learning outcomes of each module.

Excel Module

Learning goals for this module relate mainly to the learning outcome 3 "Demonstrate competence in using Excel". Achievement of this goal will ensure students' ability to smoothly progress towards advanced analytics and visualisation tools such as statistical analysis and Power BI (Modules II and III, respectively). The Excel skills will be assessed in Homework assignments 1 and as a key component of the Lab test 1 (week 3, in total worth 25%). To a lesser degree, students' Excel skills will also be evident in the Group Presentation (week 6, worth 25%).

After learning this module students should be able to:

- (i) access and use Excel screen commands in Tab, Ribbon, Group, and Launch/drop down-button as well as the use of common keyboard short-cuts to create a workbook comprising of several worksheets
- (ii) import or enter numerical, chronological, and text data on a spreadsheet and change, clean, validate, and improve data using conditional formatting, filter/advanced filter functions, power query to prepare data for further analysis
- (iii) summarise and visualise data on Excel tables, statistical charts and graphs to concisely communicate the key messages/results a specific data set reveals
- (iv) Use a range of Excel Formulas including Excel 365 array formulas
- (v) Create Pivot Tables, V-Lookup, H-Lookup, X-Lookup functions in Excel to respond to data related queries and effectively handle a large data set to obtain answers to queries

Statistical Analysis Module

Learning goals for this module relate to learning outcomes 2 and 5. After this module students should be able to calculate and apply statistical techniques to help answer analytical problems. Statistical skills will be assessed in homework assignment 2, the computer based in-lab and final exam and the group presentation.

After learning the Statistical Analysis Module, a student should be able to use Excel and SPSS to;

- (1) Calculate and understand descriptive statistics such as mean, median, standard deviation and quartiles, geometric and harmonic means.
- (2) Calculate and understand the use of t-tests and ANOVA.
- (3) Understand the effects of outliers on statistical properties of the data.
- (4) Be able to fit and interpret an OLS regression line.
- (5) Effectively present and communicate results from the above analysis.

Power BI Module

Learning goals for this module relate to learning outcomes 1 to 4. The Power BI skills will be assessed in Homework assignments 3 and as a key component of final exam. The data analytic skills will also be assessed in the group presentation.

After learning this module students should be able to:

- (i) Access and navigate through Power BI software; access basic functions/features displayed in Power BI Tab, Ribbon, Group, and Launch-button.
- (ii) Verbally describe the process of creating Power BI dashboards to enable better visualisations of data.
- (iii) Import/extract data from different sources (e.g., online, relational databases, and desktop files).
- (iv) Confidently carry out the process of Extracting, Transforming, and Loading data. Specifically, use the Power BI Query Editor to change formats to suit Power BI modelling (e.g., clean, re-arrange/transpose tables, change rows, columns, labels, and data type, including the use of unpivot function).
- (v) A basic ability to create calculations using Data Analysis Expressions (DAX).
- (vi) Create interactive dashboards to enable better visualisation of data to help gain insights into data.
- (vii) Effectively present and communicate the results obtained using Power BI and Powerpoint.
- (viii) Understand the difference between Power BI Desktop and Power BI Portal
- (ix) Appreciate capabilities of Power BI *vis-à-vis* Excel.

Course Learning Resources

Suggested reading:

Data Analytics for Accounting (2e) by V. Richardson, R. Teeter, and K. Terrell (McGraw Hill), is recommended as a supplementary reading for the course. The textbook can be electronically accessed through Otago Library resources.

[Essential Excel 2019 A Step-By-Step Guide.](#)

David Slager; Annette Slager (2020) or if using Excel 2016,

[Essential Excel 2016: A Step-by-Step Guide, David Slager | SpringerLink \(otago.ac.nz\)](#)

Beginning Microsoft Power BI: A Practice Guide to Self-service Data Analytics (3e) by Dan Clark (Apress).

ACFI299: A Refresher of Introductory Statistical Concepts (available on Blackboard).

Notes provided on ACFI 299 Blackboard page. Websites including commercial websites (e.g., Microsoft, Audit Analytics, E&Y Portal, S&P Capital IQ, SPSS, etc.), where the University of Otago has obtained permission to use for learning/teaching purposes.

Blackboard

<https://blackboard.otago.ac.nz/> provides you with access to course materials, class notices, and resources. Blackboard is used to email the whole class so it is important that you check your student email and *Blackboard* regularly.

Further information about student support, learning support and information, academic integrity and other University resources for students is available on the COMMERCE_UG_2017: Commerce Undergraduate Students site on Blackboard.

Student Webmail

We will use your student email account to email you course related information. To forward your University email address to an email address that you use regularly:

1. Log into your StudentMail account (<http://www.otago.ac.nz/smlanding/>) using your student username and password.
2. Click the **Cog** button (top right corner).
3. Click on **Mail** under **Your App Settings**.
4. Under **Accounts** on left hand side, select **Forwarding**.
5. Under the Forwarding heading, type in the email address you want your email to be forwarded to. You can also choose to have a copy of these emails kept on your StudentMail account, so please check the box if you would like this.
6. Click the **Save** button.

Assessment

All material presented is examinable (except where stated otherwise) by assignments and in-lab tests. All-important assessment information such as due dates and times, content, guidelines are noted here (also available on Blackboard) and will be discussed at lectures. *Students are responsible for ensuring that they are aware of this information, keeping track of their own progress, and catching up on any missed classes.*

| | Assessment | Due date | % of final grade | Requirements to pass this paper* |
|---|---|-------------|------------------|----------------------------------|
| 1 | Class activity and homework assignments (three) | See below** | 25% | |
| 2 | In-lab terms test | | 25% | =/> 45% |
| 3 | Group presentation (including individual contribution), worth 25% of the final grade. | | 25% | |
| | Final Exam | | 25% | =/> 50% |

***You must achieve an overall mark of at least 50% to pass the course.**

****Homework Assignments:**

You are required to participate in each class. Class activities will relate to the three homework assignments.

Each homework assignment will be based on the learning objectives for that section of the course. The first assignment will focus on applying Excel skills. The second assignment will focus on Capital IQ / statistical, SPSS skills and the third assignment will focus on Power BI/presentation skills.

Assignment 1: Excel assignment: Due week 2, Friday 22 Jan, 10.00 AM

Assignment 2: Statistical, SPSS / Capital IQ assignment: Due week 4, Monday 1 Feb, 10.00 AM

Assignment 3: Power BI Desktop: Due week 5, Tuesday 9 February 10.00 AM

Note: Students need to submit all three assignments.

Group Presentation:

There is one presentation worth 25%. You will apply the skills learnt to an analysis of firms in a selected industry. Consistent with the Guidelines for the Assessment of Student Performance, 5% of each presentation will consider the contributions of individuals to the task results. Specifically, each presenter will be graded for their contribution to the presentation. Peer evaluation will help inform the mark for the group and individual components.

Course Requirements

In order to pass the course, a student must earn the required minimum for the In-lab test and final exam. A student must also gain an overall mark of at least 50%.

Assignment Submission Procedure (Will be advised in class)

Caution: Late Assignments are not accepted. A student may request and obtain prior permission for a late submission ONLY if the delay is due to an event that is beyond the control of the student.

Referencing Style and Style Guide

For this paper the referencing style is APA. Style guides are also available on the University Library website: <http://www.otago.ac.nz/library/quicklinks/citation/index.html>

Learning Outcomes

| Learning Outcome | HW Assignment | Lab-test 1 | Presentation | Final Exam lab test |
|--|---------------|------------|--------------|---------------------|
| Develop an accounting analytic mind-set | | | X | |
| Extract, transform, and prepare accounting data for further analysis using data analytics tools. This includes being able to use Capital IQ to extract data. | X | X | X | X |
| Demonstrate competence in using data analytics tools, formulas in Excel and Capital IQ. | X | X | X | X |
| Demonstrate competence in using data analytics tools in Power BI and SPSS software to solve accounting analytics problems | X | | X | X |
| Apply visualisation techniques to interpret and communicate the results of accounting related analysis. | | X | X | X |
| Apply statistical techniques to examine company and industry trends and unusual patterns in accounting data, interpret and communicate the results to appropriate audiences. | X | | X | X |

Course Calendar

| Week beginning (Class) | | Topic | HA* Due Dates |
|------------------------|------------|---|-----------------------|
| 1 | 12 Jan (1) | Introduction to course: An introduction to the accounting analytics mind-set; Introduction to Excel 2016 (2019) and Excel 365 as a data analysis tool, Topics include Ribbonbar, Navigation, Status bar, Short cut keystroke, Quick Menu, basics of a spreadsheet and Excel formulas, cut and paste, fill handle, customise menus, formatting. | |
| | 12 Jan (2) | Using Excel to create, import, clean, manipulate and transpose accounting data for further analysis. Types of Data, Data validation, Sorting and Filtering, join or extract characters in cells (concatenate and text functions). | |
| | 14 Jan (1) | Exploring Excel Functions including, data and time, Math , Ln,log10, round, roundup, product, financial, text (left, right, mid, len), logical (if, and, or) and lookup and reference , (find, row, lookup, V-Lookup, H-Lookup, X-lookup functions, statistical, Dynamic Arrays (Excel 365). Autofill, custom lists. Power Queries | |
| | 14 Jan (2) | Exploring Excel Functions continued. | |
| 2 | 19 Jan | Summarise and visualise data on Excel tables, charts and graphs (including trend lines, two Y-axis, good design issue, scale); provide answers to data queries using Pivot tables, and PowerPivot. | |
| | 19 Jan | Excel review, MS Access joining data tables. | |
| | 21 Jan | Financial Databases: Capital IQ Web portal, Capital IQ Excel plugin, Capital IQ formula writing in Excel. | |
| | 21 Jan | Financial Database continued. | HA1 due 22 Jan 10.00 |
| 3 | 26 Jan | Using Statistics for Accounting Decision Making - Descriptive industry analysis (1) Measures of central tendency, and dispersion, effect of outliers. Additional Excel statistical functions including data analysis toolpak, and SPSS statistical functions. | |
| | 26 Jan | Inferential Statistical for Accounting Decision Making. T-tests , ANOVA, fitting a regression line. | |
| | 28 Jan | Lab terms test | |
| | 28 Jan | Introduction to Microsoft Power BI desktop and navigation; Data extraction, transformation and loading to model. | HA2, due 1 Feb, 10.00 |
| 4 | 2 Feb | Create interactive dashboards in PowerBI Desktop: Constructing Bar Column, Pie Charts, Map visualisations. | |
| | 2 Feb | Creating calculations with DAX formula, Power Pivot. | |

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|---|--------|--|----------------------|
| | 4 Feb | Publishing reports and creating dashboards in PowerBi Portal | |
| | 4 Feb | PowerBi continued, MS Team, Principles of Effective presentations, Introduction to PowerPoint. | |
| 5 | 9 Feb | Racing bar chart in Power BI. Presentation preparation class. | HA3 due 9 Feb, 10.00 |
| | 9 Feb | Presentation preparation class. | |
| | 11 Feb | Presentation preparation class. | |
| | 11 Feb | Presentation. | |
| 6 | 16 Feb | Excel tips and tricks master class. | |
| | 16 Feb | Reserved. | |
| | 18 Feb | Course Review. | |
| | 18 Feb | Help session. | |

***HA= Homework Assignment**

Lectures End Friday 18 February 2021. Exam period 20 – 25 February 2021.

Disclaimer

While every effort is made to ensure that the information contained in this document is accurate, it is subject to change. Changes will be notified in class and via Blackboard. Students are encouraged to check Blackboard regularly. It is the student's responsibility to be informed.