

## Accounting Analytics With Alteryx

### Sample 15-Week Syllabus

#### Prerequisites:

Students should have completed an introductory statistics class and financial accounting or corporate finance classes.

#### Required Materials:

- Windows laptop computer with Microsoft Office 365
- Alteryx Designer Software. Sign up for a free license here: [www.alteryx.com/sparked/learning-programs/students](http://www.alteryx.com/sparked/learning-programs/students) (Click on Start Learning). Additional instructions can be found at the end of the syllabus.
- Textbook: *Accounting Analytics With Alteryx* by Dehning, Stratopoulos, and Mohapatra. All student materials, including the textbook PDF, are on the textbook website, [www.aawabook.com](http://www.aawabook.com).

#### Course Description

The course is based on data analytics and technology-related teaching material developed explicitly for accounting and finance students. This course will use Alteryx, a relatively new data science and analytics software program. Alteryx was designed with ease of use at the forefront, making advanced analytics available to everyone.

We will start working with datasets in a single file (e.g., an Excel file with just one worksheet) in Part I. In Part II, we will learn what linking data in organized and meaningful ways means (i.e., forming a relational database). These data may relate, for example, to sales, purchases, inventory, and payroll. In Part III, we will discuss extracting, preparing, and analyzing data and leveraging data analytics in forecasting (e.g., forecasting sales).

#### Course Learning Outcomes

After taking this course, students will be able to:

1. Introduce concepts/tools and case-based problems (business understanding).
2. Apply concepts using appropriate tools and available case data.
3. Communicate the key findings from the data analysis and debrief.

#### Course Overview

Since the early 1990s, and primarily due to technological changes, the business landscape has become very competitive. It has become hyper-competitive (D'Aveni, Dagnino, and Smith 2010; D'Aveni 1994). The most successful companies embrace and leverage this constant state of change. They need well-trained employees prepared to keep up with these technological changes.

In simple terms, the idea behind data analytics, business analytics, or accounting analytics - is that decision-makers should look at all available data to support their decision-making. Decision-makers need to understand what happened in the past and why, what is happening now and why it is happening, and what is likely to occur in the future.

Applications of data analytics in accounting and finance includes topics such as:

- Financial Accounting: Compare competing strategies (product differentiation and cost leadership) through ROA decomposition and establish a company's relative position (competitive advantage, parity, disadvantage) versus its peers.
- Managerial Accounting: Understand how we translate data into the information needed to monitor the performance of a business. For example, work with retail companies to analyze sales and develop an interactive business dashboard.

- Auditing: Audit client records to identify fraud or inventory valuation errors. Generate a model to predict sales and compare expected versus actual sales. Any material discrepancies might be indicators of fraud.
- Taxation: Analyze client data for compliance with IRS rules. Forecast sales to calculate tax prepayments.

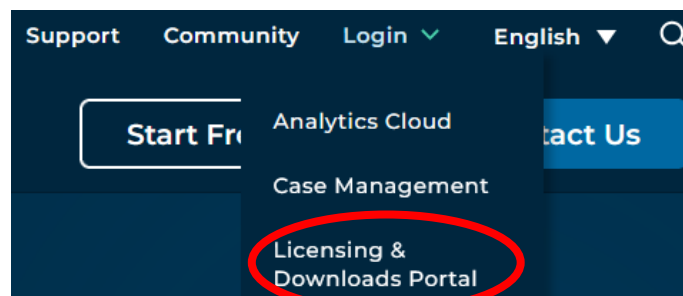
### Workload

The workload for this class is approximately 6-9 hours per week outside of class, although, in some weeks, it may be slightly more.

However, **students are responsible for the accuracy and authenticity of the material that the AI generates in response to their prompt or AI query.** The student must verify the information's accuracy and use it ethically to avoid academic integrity issues. **Students' use of AI tools must be appropriately documented and referenced.**

### Alteryx Installation Instructions for PC

Go to the Alteryx website (<https://www.alteryx.com/>) to create an account using your university email address. Click on the Login drop down menu and then the Licensing and Downloads Portal to reach a sign in page where you can create an account.



After your account is created, you need a license to install Alteryx. You can apply for one here: <https://www.alteryx.com/sparked/learning-programs/students> (click on the “Start Learning” button).

Once you receive the license, go back to the Licensing and Downloads Portal to download the Alteryx installation files:

Product Downloads --> Alteryx Designer --> Alteryx Designer (2024.2) --> Next --> Alteryx Designer (Admin version) --> Download: **Alteryx Designer (Admin version) and Alteryx Predictive Tools (Admin version)**

Install Alteryx Designer first and then Alteryx Predictive Tools. For additional information and help with installing Alteryx, see Appendix B of the textbook.

## Course Schedule

Week	Topic	Required Reading and Videos (see Appendix D for links)	Recommended Reading and Videos	Assignments Due
1	CHAPTER 1 Introduction & CHAPTER 2 Integrated Case: Industry Analysis	AAWA Chap. 1 1. Getting Started with a Tour of Alteryx Designer 2. Decisions with Data 3. Defining Data	AAWA Chap. 2 1. How to Get Started with the Alteryx Designer 2. How to Build Your First Workflow in Alteryx Designer 3. Beginner To Alteryx Designer PRO in 45 Minutes	
2	CHAPTER 2 (continued)	AAWA Chap. 2 1. Formatting Data 2. Filtering Data 3. Summarizing Data	AAWA Appendix A Section A.1 to A.5	ICPP: 2.3.2; 2.3.3
3	CHAPTER 3 Integrated Case: Strategic Analysis	AAWA Chap. 3 1. Diving Into Expressions 2. Writing Conditional Statements 3. Blending Data With Unions 4. Joining Data	AAWA Appendix A Section A.6 to the end of the appendix.	ICPP: 2.3.4; 2.3.5; 2.3.6; 2.4.1; 2.4.2; ECPP: 2.1; 2.2
4	CHAPTER 4 Integrated Case: Customer Analysis	AAWA Chap. 4 1. Tool Mastery   Contingency Table 2. Contingency Table Tool	1. How to Use the Contingency Table Tool in Alteryx 2. Changing Data Layouts (Transpose and Cross Tab)	ICPP: 3.4.3; 3.4.4; 3.4.5.1; 3.4.5.2; ECPP 3.1
5	APPENDIX B Introduction to Relational Databases	AAWA App. B 1. Database-ics 2. Data in the Cloud 3. Introduction to Entity Relationship Models 4. Lots of Relational Database Terms Explained	1. Entity Relationship Diagram (ERD) Tutorial - Part 1 2. Entity Relationship Diagram (ERD) Tutorial - Part 2	ICPP: 4.5.1; 4.5.4; 4.6.5; 4.8.1; 4.8.2; 4.9.1; 4.9.2; ECPP 4.1
6	APPENDIX B (continued)			ECPP B.1

<b>Week</b>	<b>Topic</b>	<b>Required Reading and Videos (see Appendix D for links)</b>	<b>Recommended Reading and Videos</b>	<b>Assignments Due</b>
<b>7</b>	CHAPTER 5 Integrated Case: Internal Audit	AAWA Chap. 5 1. Blending Data With Unions 2. Joining Data		SQL In-Class Assignment SQL Alteryx Assignment
<b>8</b>	CHAPTER 6 Integrated Case: Inventory Analysis	AAWA Chap. 6 1. Changing Data Layouts (Transpose and Cross Tab)		ICPP: 5.4.1; 5.4.2.1; 5.4.2.2; 5.5; 5.6.1; 5.7; ECPP: 5.1; 5.2
<b>9</b>	CHAPTER 7 Integrated Case: Tax Analytics	AAWA Chap. 7 1. Multi-Field Formula Tool		ICPP: 6.4; 6.5.3; 6.5.4; 6.6.1; 6.6.2; ECPP 6.1
<b>10</b>	CHAPTER 8 Forecasting Revenues, Part 1	AAWA Chap. 8 1. Regression Analysis	Chapter 15 of the text “Introductory Statistics Explained”	ICPP: 7.4.2; 7.4.3; 7.4.5; 7.4.6; 7.6.1; ECPP 7.1
<b>11</b>	CHAPTER 8 (continued)			ICPP: 8.5; 8.5.1.1; 8.5.1.2; 8.5.2.1; 8.5.2.2; 8.5.2.3; 8.5.2.4; 8.5.3; 8.5.4
<b>12</b>	CHAPTER 9 Forecasting Revenues, Part 2	AAWA Chap. 9 1. Predictive Models in Alteryx		ICPP: 8.7; 8.7.1.1; 8.9; ECPP 8.1
<b>13</b>	CHAPTER 10 Apple: Forecasting Quarterly Sales, Part 1	AAWA Chap. 10 1. Introduction to Time Series Regression and Forecasting 2. Multi-Row Formula Tool		ICPP: 9.6; 9.7; 9.8; ECPP: 9.1; 9.2
<b>14</b>	CHAPTER 11 Apple: Forecasting Quarterly Sales, Part 2	AAWA Chap. 11 1. Performing Time Series Forecasting in Alteryx Designer 2. Time series analysis 3. How to use the ARIMA tool	1. How to Create a Time Series Forecast in Alteryx 2. Time Series Forecasting in Alteryx (Part 1) 3. Time Series Forecasting in Alteryx (Part 2)	ICPP: 10.7.1, 10.7.2, 10.7.4, 10.8; ECPP 10.1
<b>15</b>	<b>Final Exam</b>			ICPP: 11.7.3, 11.7.4, ECPP 11.1