B.S. In Data Science with Financial Data Analytics (FIDA) Concentration

A data science degree with a concentration in Financial Analytics will provide students with a strong background in core financial concepts and the latest applied tools in financial modeling and financial analytics. The concentration is structured so that students will have flexibility to focus heavily on financial analytics or to focus on a combination of analytics and traditional finance content such as Investments and Corporate Finance. These skills will enable graduates to apply cutting-edge technical tools to financial projects, and to bridge the communication gap between corporate technicians and financial analysts.

Concentration = 21 Hours

Course Code	Course Title	Hours
Required Courses for Financial Analytics Concentration		
ACCT 2013	Accounting Principles	3
FINN 2043	Principles of Finance [1]	3
FINN 3103	Financial Modeling [2]	3
FINN 4323	Financial Data Analytics I [9]	3
Total Requirements		12
Electives For Financial Analytics Concentration (Select 9 Hours)		9
FINN 3003	Personal Financial Management	3
FINN 3013	Financial Analysis [2]	3
FINN 3053	Financial Markets and Institutions [7]	3
FINN 3063	Investments [2,8]	3
FINN 3133	Commercial Banking [2]	3
FINN 3603	Corporate Finance [2,3]	3
FINN 3623	Risk Management	3
FINN 3703	International Finance	3
FINN 3933	Real Estate Principles	3
FINN 4163	Advanced Financial Modeling [4]	3
FINN 4243	New Venture Finance [5]	3
FINN 4333	Financial Data Analytics II [6]	3
Total Hours: 21		

1. Prerequisites: BUSI 1033 or equivalent, ACCT 2013, ECON 2143
2. Prerequisite: FINN 2043
3. Prerequisite: FINN 3013
4. Prerequisite: FINN 3013 or FINN 3103
5. Prerequisite: Junior Standing
6. Prerequisite: FINN 4323
7. Prerequisite: ECON 2143
8. Corequisite: FINN 3013
9. Prerequisite: FINN 4163 or DASC 2113

The UAF B.S. Data Science major will prepare students for a successful career in data science with an amalgamation of capabilities:

1. Design, implement, and evaluate a data driven solution to meet a given set of stakeholder requirements in the context of the program's discipline involving the collection, representation, manipulation, storage, governance, security, modeling (descriptive, predictive, and prescriptive), and visualization of data.

2. Analyze a complex problem facing industry, government, or society and to apply principles of data science and other relevant disciplines to identify solutions.

3. Recognize professional responsibilities and make informed judgments in data science practice based on legal and ethical principles.

4. Apply critical thinking, problem identification, problem solving skills, theory, techniques, and tools throughout the data analysis lifecycle and employ the resulting knowledge to satisfy stakeholders' needs.

5. Function effectively as a member or leader of a multidisciplinary team engaged in activities appropriate to the program's discipline.

6. Communicate effectively (in written, verbal, technical, visual, and non-technical forms) in a variety of professional contexts and assist decision makers with the interpretation and implications of conclusions supported by data.

Financial Analytics Concentration Learning Objectives:

7. Assess the valuation and performance of financial assets, businesses, or households through application of core financial concepts and interpretation of financial statements.
8. Manipulate financial data using common analytical tools such as spreadsheets to visualize and present information in a clear and succinct manner.
9. Apply advanced financial analytical methods such as Power BI, AI, and Python to financial problems.
10. Understand the principles and techniques of advanced programming languages as applied to financial data.

Course Code	Course Title	Core Outcomes	Concentration Outcomes
Required Financial Analytics Concentration Courses (15)			
ACCT 2013	Accounting Principles	3,6	7,8
FINN 2043	Principles of Finance	3,6	7,8
FINN 3103	Financial Modeling	2,3,6	7,8
FINN 4323	Financial Data Analytics I	1,4,5,6	7,8,9,10
Elective Financial Analytics Concentration Courses (9)			
FINN 3003	Personal Financial Management	3,4,6	7,8
FINN 3013	Financial Analysis	3,4,6	7,8

FINN 3053	Financial Markets and Institutions	3,4,6	7,8
FINN 3063	Investments	3,4,6	7,8
FINN 3133	Commercial Banking	3,4,6	7,8
FINN 3603	Corporate Finance	3,4,6	7,8
FINN 3623	Risk Management	2,3,4,6	7,8
FINN 3703	International Finance	3,4,6	7,8
FINN 3933	Real Estate Principles	3,4,6	7,8
FINN 4163	Advanced Financial Modeling	1,4,5,6	7,8,9
FINN 4243	New Venture Finance	3,4,6	7,8
FINN 4333	Financial Data Analytics II	1,4,5,6	7,8,9,10

Enhancing Overall Program Outcomes:

1. Design, implement, and evaluate a data driven solution to meet a given set of stakeholder requirements in the context of the program's discipline involving the collection, representation, manipulation, storage, governance, security, modeling (descriptive, predictive, and prescriptive), and visualization of data.

   The Financial Analytics concentration will provide students with the ability to securely and efficiently obtain financial data, visualize and analyze it, and communicate the extracted information and trends in a clear manner to the decision makers in the private and public sector.

2. Analyze a complex problem facing industry, government, or society and to apply principles of data science and other relevant disciplines to identify solutions.

   The Financial Analytics concentration will provide students with the financial knowledge and advanced tools that are being used in financial modeling. Investors and financial institutions are switching from spreadsheets to more advanced approaches that combine programming languages with artificial intelligence. Graduates will be able to assist in this transition either directly by developing technical solutions or as intermediaries who bridge the gap between technicians and financial practitioners.

3. Recognize professional responsibilities and make informed judgments in data science practice based on legal and ethical principles.

   Students will be exposed to the ways in which financial innovation can benefit or harm individuals and groups. They will learn that recommendations and feasibility of proposals and decisions depend on legal, cultural and ethical boundaries.

4. Apply critical thinking, problem identification, problem solving skills, theory, techniques, and tools throughout the data analysis lifecycle and employ the resulting knowledge to satisfy stakeholders' needs.

Students will demonstrate an ability to integrate complex data-based concepts with financial analysis to provide recommendations of relevance to stakeholders in the public and private sector.

5. Function effectively as a member or leader of a multidisciplinary team engaged in activities appropriate to the program's discipline.

   Students will learn how to collaborate on team projects to solve complex data-driven problems and deliver financial analysis that clearly explains the key issues. In this process, students will identify their comparative advantages in group dynamics.

6. Communicate effectively (in written, verbal, technical, visual, and non-technical forms) in a variety of professional contexts and assist decision makers with the interpretation and implications of conclusions supported by data.

   Students will develop the ability to handle a Financial Analytics problem from the point of problem definition to delivery of a solution; be proficient in collecting and processing real-world data using advanced data techniques and software; be competent in working in small groups and delivering their ideas and results.