



Q2-2024 FDP Exam Candidate Orientation

Welcome
We will start promptly at 11 AM ET

Please add your questions to the chat box, we will address them during the Q&A.
If you are unable to hear speakers just let us know in the chat box.

Following the webinar, you will receive a link to the recording.
You can find a copy of all our webinar recordings and slide decks at the links provided below.

www.caia.org/caia-infoseries
www.fdpinstitute.org/webinars



FDP Candidate Orientation

Q2-2024 Exam

Test Center April 8 – 21, 2024

Remote Proctor Exam April 21 & 22, 2024



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Agenda



Part I

- FDP Charter

Part II

- LO & Practice Question Review

Part III

- Exam Structure & Format

Part IV

- Candidate Experience

Q&A



FDP Program Update

- With a near revolution in AI and machine learning and their implications for the financial industry, it is the right time to be taking a full inventory of our curriculum readings and learning objectives, as the relevancy of our curriculum must never be compromised.
- After the April 2024 exam session closes, the FDP Institute will pause the administration of the FDP exam to review its curriculum.
- While this review is taking place. The FDP Institute, its website, and educational activities will continue to be available.
- FDP Charters will be unaffected by this review.



FDP Charterholders:

- ✓ Will have the skills to help financial institutions extract maximum benefits from the new digital transformation.
- ✓ Will be sought after by various financial industry segment employers as data is the new oil and tools and techniques of machine learning

Why?

- ✓ Big Data's Potential: Industry leaders have long recognized Big Data's potential for increasing revenues, creating efficiencies, and managing risk.
- ✓ Big Data's Challenge: The sheer amount of data collected by the finance industry poses a challenge – how to extract maximum value from it.

FDP Charterholder's role:

- ✓ How to evaluate Big Data's potential: Big Data and Alternative Data sets are expensive and require careful evaluation before vast resources are allocated to their acquisition. FDP Charterholders, with their domain knowledge and understanding of machine learning tools, will be in a perfect position to perform this task.
- ✓ Which problems the quant team should focus on: Not every financial problem can be solved using a combination of machine learning and Big Data. FDP Charterholders can identify areas with the highest ROI and direct corporate resources in that direction.
- ✓ How to interpret the results: Understanding the solutions generated by many machine learning algorithms requires domain knowledge and appreciation of these algorithms. FDP Charterholders can interpret the results generated by these algorithms and recognize their benefits and limitations
- ✓ How to communicate the results: The best solutions will be worthless if the end-user does not understand them, leading to poor execution and lost opportunities. FDP Charterholders are translators who can work with advisors, portfolio managers, and clients to ensure that the results are clearly understood and implemented correctly.



Representative Charterholder Firms

“Employers increasingly seek professionals, who have **the skills to apply data science tools to solve their most challenging problems.**”



Part II



Preparing to Study, Learning Objectives & Practice Question Review

Study & Preparation

- [Study Curriculum Materials](#) – approx. 200+ hours to prepare
- [Practice Questions](#) – familiarize yourself with types of questions
- [Sample Exam](#) – replicates structure of the actual exam
- [Demo Exam](#) – replicates login procedures and test environment
- [Calculator Tutorial](#) – understanding how to use the online calculator
- Lessons learned & [FAQ](#)



Topics, Learning Objectives, Keywords & Action Words

TOPIC 4
Classification,
Clustering, and Naïve
Bayes

READING 4.2
John C. Hull (2021).
Machine Learning
in Business: An
Introduction to the
World of Data
Science.
Independently
Published by GFS
Press, 3rd Edition.
Chapter 2.

KEYWORDS

- Keywords**
- Scaled feature (p. 24)
 - Z-score (p. 24)
 - Min-max scaling (p. 24)
 - k-means (p. 25)
 - Inertia (p. 30)
 - Elbow method (p. 30)
 - Silhouette method (p. 31)
 - Gap statistic (p. 32)
 - Curse of dimensionality (p. 33)
 - Cosine function (p. 33)
 - Principal component (p. 41)
 - Factor loading (p. 42)

LEARNING OBJECTIVE 4.2.1

- Learning Objectives**
Demonstrate proficiency in the following areas: **Action words defined in Study Guide**
- 4.2.1 Unsupervised Learning For example:**
- A. Calculate and interpret feature scaling using Z-score and mini-max.
 - B. Interpret the Euclidean distance.
 - C. Calculate and interpret the centroid of a cluster.
 - D. Describe the primary features and the process of implementing the k-means algorithm.
 - E. Calculate and interpret inertia as a measure of the clustering algorithm.

SAMPLE QUESTION

A k-means clustering has been applied to the following 7 observations. The Euclidean distances of each observation to its cluster's center are given below. What is the inertia of Cluster A?

- A. 5.1
- B. 8.0
- C. 26.0
- D. 64.0

Euclidean Distance from Cluster's Center	
Cluster A	Cluster B
3	6
1	2
4	5
	0

$$\text{Inertia} = \sum_{i=1}^n d_i^2 = 3^2 + 1^2 + 4^2 = 26$$



Constructed Response Questions

ESSAY QUESTION

Marilyn Taylor is a quantitative analyst responsible for finding new investment ideas in the equity space. In the past, she has used unsupervised learning techniques to filter firms from a larger list, and this technique seems to have worked well for her. She mainly considers firm characteristics, such as P/E ratio, P/B ratio, and size, for her analysis.

Recently, she has come across Volta Electric Company, which looks interesting to her. Currently, it has a P/E ratio of 16.5, a P/B ratio of 2.3, and a size value of 4.6 billion. To compare Volta with some other companies, she pulled out information on 3 companies that she had analyzed in the past. Out of the 3 companies, 2 were recommended for investment and 1 was not recommended. Following table provides information on the three companies.

Name	P/E Ratio	P/B Ratio	Size (\$ billions)	Recommendation
Northern Healthcare	14	2.1	5.9	Invest
Wholesome Foods	17	1.5	6.7	Invest
Real Tech	21	1.8	7.8	Do not invest

SAMPLE QUESTION

- A. Marilyn uses Euclidean distance to measure the difference between a new company and the companies she has analyzed in the past. What are the Euclidean distances between Volta and the 3 companies listed in the table above?

If we take a majority vote of the distances, what would be the recommendation by Marilyn for Volta? Explain how you decided on this.

(5 points)

Constructed Response Questions

SAMPLE QUESTION (repeated for reference)

- A. Marilyn uses Euclidean distance to measure the difference between a new company and the companies she has analyzed in the past. What are the Euclidean distances between Volta and the 3 companies listed in the table above?

If we take a majority vote of the distances, what would be the recommendation by Marilyn for Volta? Explain how you decided on this.

(5 points)

SAMPLE ANSWER

Euclidean distance between Volta and:	Distance
Northern Healthcare	$\sqrt{(16.5 - 14)^2 + (2.3 - 2.1)^2 + (4.6 - 5.9)^2} = 2.82$
Wholesome Foods	$\sqrt{(16.5 - 17)^2 + (2.3 - 1.5)^2 + (4.6 - 6.7)^2} = 2.30$
Real Tech	$\sqrt{(16.5 - 21)^2 + (2.3 - 1.8)^2 + (4.6 - 7.8)^2} = 5.54$

The recommendation would be to invest in Volta. If we consider the distances between Volta and the three companies analyzed earlier, we see that two of the companies are quite close in terms of the Euclidean distance and the recommendations for both of these companies is to invest in them. Majority voting requires us to look at all the points that are close to point we are trying to classify and assigns the majority class from the closest points to the new point.

Part III



Exam Structure & Format

Examination Structure

- 80 multiple choice questions (75%)
- 3-4 multi-part constructed responses (25%)

Topics	Approximate Weight %
1. Introduction to Data Science	5-10
2. Linear and Logistic Regression, Support Vector Machines, Regularization, and Time Series	10-15
3. Decision Trees, Supervised Segmentation, and Ensemble Methods	8-12
4. Classification, Clustering, and Naïve Bayes	8-12
5. Neural Networks and Reinforcement Learning	8-12
6. Performance Evaluation, Back-Testing, and False Discoveries	5-10
7. Textual Analysis and Large Language Models	10-15
8. Ethics, Privacy, and Regulation	8-12
9. Fintech Applications	15-25



Examination Format

(both exam types)

Session 1: 80 multiple choice questions

135 minutes

Optional break

Session 2: 3-4 multi-part constructed responses

65 minutes

Non-disclosure agreement (must be completed within 5 minutes)	5 minutes
Exam instructions	10 minutes
80 Multiple Choice (MC) Questions	135 minutes
Break (optional)	20 minutes
3-4 Constructed Response Questions	65 minutes
Comment Period (optional)	2 minutes
Total Exam Session Time	4 hours

RPT candidates: reminder that your security login process is part of your optional break time

Post Exam: Candidate Performance Report

- The FDP Candidate Performance Report is intended to aid in self-assessment by indicating your areas of relative strength and weakness among the topics in the exam, compared to a reference group.
- The reference group is comprised of all candidates whose total test scores were within the bottom quartile of those who passed the exam during the testing window in which you sat for the exam.

FDP Examination Topics	Relative Performance Level
Introduction to Data Science	Above
Linear & Logistic Regression, Support Vector Machines, Regularization, and Time Series	Above
Decision Trees, Supervised Segmentation, and Ensemble Methods	Above
Classification, Clustering, and Naïve Bayes	Below
Neural Networks and Reinforcement Learning	Equal
Performance Evaluation, Back-Testing, and False Discoveries	Above
Textual Analysis and Large Language Models	Equal
Ethics, Privacy & Reulation	Above
Fintech Applications	Equal

Part IV



Candidate Experience

Candidate Checklist

Candidate Checklist

- Register for the FDP Exam
- Obtain the Curriculum Materials
- Reserve Exam Seat
 - Option 1 - Test Center
 - Option 2 - Online Proctoring
- Sit for the Exam
- Complete Online Course Requirements
- Sign Code of Ethics
- Provide Two References (Not Recommendations)



Reserve Your Exam Seat!

Access the tutorial here

DEMO – Learn more here

All FDP Candidates, registered for the Q2-2024 FDP exam are eligible to test the Prometric exam software.

Learn if your hardware, your exam environment, or your webcam meet the requirements.



Option 1 At a Prometric Test Site

- **Exam window: April 8 – 21, 2024***
- Candidates **can't** bring their personal calculator.
 - A scientific calculator is provided in the software.
- Seats have to be reserved by **March 20, 2024.**



Option 2 Remote Proctored Testing

- **RPT Days: April 21 & 22, 2024***
- Candidates **can't** bring their personal calculator.
 - A scientific calculator is provided in the software.
- **Applications** for RPT have to be received by **March 15, 2024.**
- Seats have to be reserved by **March 20, 2024.**
- *Once you have selected a remote proctored exam, you may not re-schedule an appointment at a later date at any physical site.

Demo Exam & Tutorial

Page: 1
Section: Introduction
Introduction Time Rem... 00:07:29
Progress 0%
Finish Test

Test: FDP Demo Exam
Candidate: USER Demo

1
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16

Welcome to the Financial Data Professional DEMO Exam

DEMO Structure

This DEMO is intended to familiarize yourself with the features and the questions within this exam. This DEMO contains **5 questions** and you will have **30 Minutes** to answer the questions.

Please note the following about this DEMO:

1. If you were to request specific timing adjustments when scheduling your actual FDP exam and it was approved; the above exam time will be adjusted to support the request. For this DEMO the timing will reflect the 30 minutes allotted.
2. Candidate comments added to a specific exam item are reviewed in aggregate along with performance metrics, and individual comments will not be responded to directly.

Before you begin, it is strongly encouraged that you take a few minutes to review the tutorial before attempting any exam questions. The tutorial provides an overview of the features available to you during the examination.

**** The tutorial does not take away any of your exam-time.****

After completing and reviewing all of the questions within a section, you can navigate to the next section by clicking the **"Finish Section"** button in the top-right corner of the screen.

Once clicked, a pop-up window will appear confirming that you want to finish the section. Click **"Yes"** to submit your answers for the current section and progress to the next section.


Click **"No"** to return to the current section. Please note that once you progress past a section you may not return at any point. Any questions that are incomplete will be marked as unanswered.

Page: 7
Section: Introduction
Introduction Time Rem... 00:08:58
Progress 0%
Finish Test

Test: FDP Demo Exam
Candidate: USER Demo

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16


Flagging Questions



You can flag a question as a reminder to go back and check your answer or attempt it later.

To flag a question, click the **Flag** button displayed at the bottom of the exam screen.

Any questions that are flagged for review will show a flag icon on the numbered button, as shown below. Click the **Flag** button again to remove the flag.



Click the 'Next' button to continue.

This page requires scrolling

< Back Next > Start the Test >

Familiarize yourself with the Prometric platform



https://training.prod.prometric.mindgrb.io/FDP-Tutorial/launch_html_delivery.html

Prometric Scientific Calculator

Test: FDP Demo Exam Candidate: USER Demo

- 1
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- 3
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- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Using the Calculator

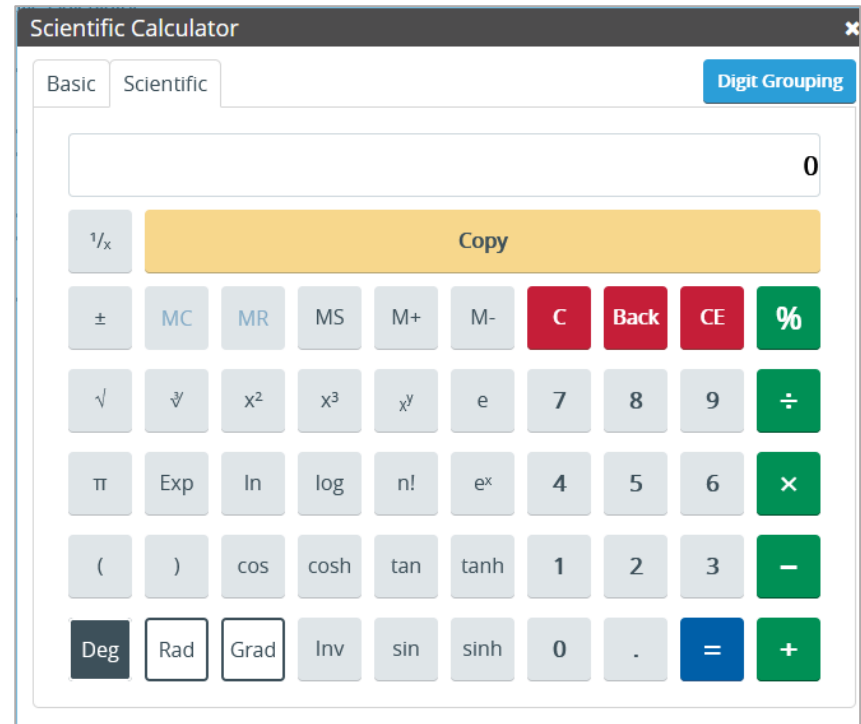
 Calculator 

A calculator is available for your use on every item in the exam.

You can use the calculator to perform any of the standard operations for which you would normally use a handheld calculator. The calculator performs basic arithmetic, such as addition and subtraction, as well as functions found on a scientific calculator, such as logarithms and factorials.

Initially, the calculator will display the scientific functions. Click the tab in the top-left corner of the calculator pop-up to toggle between the scientific and basic views.

Click the 'Next' button to continue.



The screenshot shows the 'Scientific Calculator' window with a 'Basic' tab selected. The display shows '0'. A 'Copy' button is highlighted in yellow. The calculator interface includes various mathematical functions and arithmetic operators.

1/x	Copy								
±	MC	MR	MS	M+	M-	C	Back	CE	%
√	∛	x ²	x ³	x ^y	e	7	8	9	÷
π	Exp	ln	log	n!	e ^x	4	5	6	×
()	cos	cosh	tan	tanh	1	2	3	-
Deg	Rad	Grad	Inv	sin	sinh	0	.	=	+

Unlimited access to the Prometric Scientific calculator

https://training.prod.prometric.mindgrb.io/FDP-Tutorial/launch_html_delivery.html

Our Learnings

Your Resources

Practice Questions & Sample Exam

Exercise 1 – Practice Questions:

The practice questions are intended to familiarize yourself with the types of questions. These questions are based on lessons in the curriculum to help you evaluate your topic-level strengths and weaknesses. All questions are rooted in the current curriculum, and in the same format as the questions on the actual exam. Please note, this exercise is not designed to represent the replication of an actual exam.

- 92 Multiple choice questions
- 8 Constructed response questions

Click on image below to access Practice Questions



Exercise 2 – Sample Exam:

The sample exam replicates the structure of the actual FDP exam. In terms of structure, the sample exam consists of the topic area weights and level of difficulty as the actual exam. Questions are based on the current curriculum for the exam.

- 80 Multiple choice questions
- 3 Constructed response questions

Click on image below to access Sample Exam





Exam Day Prep

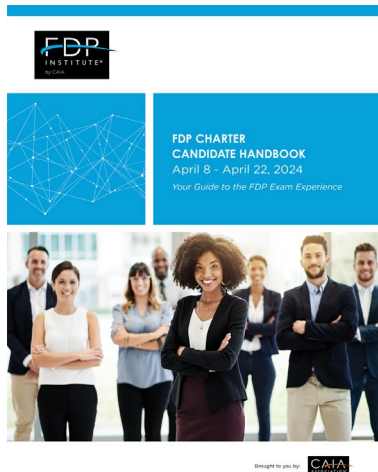
Check ID Policy

- Two valid (not expired) forms of ID
 - → Make sure your name in your FDP profile MATCHES that on your ID
- Both must have a signature
- One must have a photo
- Passport preferred
- The name on your IDs must exactly match the name with which you schedule your exam.

Check the Prometric website for Test Taker “What to Expect” Information

The screenshot shows the Prometric website navigation bar with the following links: TEST TAKERS (highlighted in blue), TEST OWNERS, REMOTE ASSESSMENT, ABOUT US, and CONTACT (highlighted in yellow). Below the navigation bar, the 'WHAT TO EXPECT' section is visible, with a sub-header: 'Important information on Prometric’s enhanced test center procedures you need to know for test day.' The main content area contains a paragraph: 'At Prometric, our priority is to ensure that all test takers who visit our test centers have a safe, secure, and stress-free experience. In response to the COVID-19 pandemic, we have worked with third-party experts, including epidemiologists from Johns Hopkins University, to modify and enhance our established [test center procedures](#) to minimize the risk of transmission and to protect test takers and staff.' Below this is a video placeholder: 'The following video will provide you with a detailed overview of what to expect during your upcoming visit to a Prometric test center, so that you will feel more prepared and more confident in your testing experience. We wish you the very best of luck on test day!'

Exam Day Items Permitted



[Click here to access](#)

Test Center

- Identification
- Test center locker key
- Approved face mask if needed.

Remote Testing

- Identification
- A clear glass with water
- Four clean sheets of paper
- One pencil or pen
- Two tissues

Refer to the Candidate Handbook for items not permitted in the testing environment.



Prep Course Providers

FDP Institute's exclusive third-party independent Prep Provider to help Candidates find the best fit for their study needs. The **Revision and Exam** program may include:

- **Video Review** covering all 9 topics
- Full set of revision **notes** in PDF format
- **Formula sheet**
- Full practice **exam** with solutions

For details and registration:

<https://www.edgedesignations.com>

*Edge Designations is an independent provider and not affiliated with CAIA or FDP. The FDP Study Guide is the only approved Study Guide. Prep course is not included in registration fee.

Q2-2024 Shortcuts

(click on the item you would
like to learn more about)



Q2-2024 Exam Participants

Reserve Your Exam Seat
by March 20

Candidate Handbook
(What to bring on exam day)

Tutorial link
practice your calculator
questions

Candidate Study Guide
(Appendix of formulas)

DEMO RPT exam
Test your system, experience the
log-in procedures

Practice Questions
(exam reg required)

Webinars
www.fdpinstitute.org/webinars

Sample Exam
(exam reg required)

**Edge Designations Prep
Course**

Q&A



Contact Us:



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