Syllabus

Module 1

Concepts for data modeling
This module introduces data modeling and the schemas used to create them.
13 videos, 23 readings

1. **Video:** Course introduction
2. **Reading:** Course syllabus
3. **Reading:** How to be successful in this course
4. **Discussion Prompt:** Discussion prompt: What do you hope to learn?
5. **Reading:** How to open an image in a new tab
6. **Reading:** Setting up your Power BI environment
7. **Reading:** New name for Power BI datasets
8. **Reading:** How to locate your downloaded files
9. **Reading:** Additional resources: Concepts for data modeling
10. **Video:** Introduction to data models
11. **Reading:** Model view in Power BI
12. **Video:** Introduction to schemas
13. **Reading:** Schemas cheatsheet
14. **Video:** Setting up a Flat schema in Power BI
15. **Reading:** Table and column properties cheatsheet
16. **Reading:** Exercise: Configuring a Flat schema
17. **Graded Assignment:** Self-review: Configuring a Flat schema
18. **Reading:** Exemplar: Configuring a Flat schema
19. **Reading:** Activity: Configure a Flat schema with multiple sources
20. **Graded Assignment:** Knowledge check: Introduction to data models
21. **Reading:** Additional resources: Introduction to data models
22. **Video:** Understanding fact and dimension tables
23. **Reading:** Normalization and denormalization
24. **Video:** Introduction to cardinality
25. **Reading:** Managing model relationships
26. **Reading:** Model relationships cheatsheet
27. **Video:** Introduction to cross-filter direction
28. **Video:** Defining data granularity
29. **Graded Assignment:** Knowledge check: Introduction to cardinality and cross-filter direction
30. **Reading:** Additional resources: Introduction to cardinality and cross-filter direction
31. **Video:** Setting up a Star schema in Power BI
32. **Reading:** Exercise: Configuring a Star schema
33. **Graded Assignment:** Self-review: Configuring a Star schema
34. **Reading:** Exemplar: Configuring a Star schema

35. **Video:** Setting up a Snowflake schema
36. **Reading:** Activity: Changing your Star schema into a Snowflake schema
37. **Video:** Why it is important to use Snowflake schema
38. **Reading:** Data View in Power BI
39. **Video:** Resolving challenges in data models
40. **Graded Assignment:** Knowledge check: Working with advanced data models
41. **Video:** Module summary: Concepts for data modeling
42. **Discussion Prompt:** Why is data modeling important in the data analysis process?
43. **Reading:** Additional resources: Working with advanced data models

Graded: Module quiz: Concepts for data modeling

Module 2

Using Data Analysis Expressions (DAX) in Power BI

This module introduces the learner to the DAX (Data Analysis Expressions) language. The module explores the syntax of DAX using multiple business use cases. The module also integrates DAX with previous lessons on database tables and their use and introduces the concept of time intelligence.

23 videos, 21 readings

1. **Video:** Introduction to Data Analysis Expressions (DAX)
2. **Video:** Formulas and functions in DAX
3. **Video:** Row context and filter context
4. **Reading:** DAX cheatsheet
5. **Video:** Introduction to calculated tables
6. **Reading:** Cloning and calculating tables
7. **Reading:** DAX table functions
8. **Video:** Creating calculated columns
9. **Reading:** Exercise: Adding a calculated table and column
10. **Graded Assignment:** Self-review: Adding a calculated table and column
11. **Reading:** Exemplar: Adding a calculated table and column
12. **Graded Assignment:** Knowledge check: Using Data Analysis Expressions (DAX) in Power BI
13. **Reading:** Additional resources: Introduction to DAX
14. **Video:** Introduction to measures
15. **Video:** Types of measures
16. **Video:** Basic statistical functions
17. **Reading:** Statistical functions cheatsheet
18. **Video:** DAX measures and context in business
19. **Graded Assignment:** Knowledge check: Introduction to measures
20. **Reading:** Additional resources: Introduction to measures

21. **Video:** Creating quick measures
22. **Video:** Creating custom measures with DAX
23. **Reading:** Exercise: Adding a measure
24. **Graded Assignment:** Self-review: Adding a measure
25. **Reading:** Exemplar: Adding a measure
26. **Video:** Introduction to the CROSSFILTER function
27. **Video:** Using CALCULATE with filters
28. **Reading:** Filter functions in CALCULATE
29. **Reading:** Activity: Using the CALCULATE function
30. **Graded Assignment:** Knowledge check: Working with measures
31. **Reading:** Additional resources: Working with measures
32. **Video:** Introduction to role-playing dimensions
33. **Video:** Introduction to the USERELATIONSHIP function
34. **Video:** Configuring role-playing dimensions
35. **Reading:** Exercise: Adding a role-playing dimension
36. **Graded Assignment:** Self-review: Adding a role-playing dimension
37. **Reading:** Exemplar: Adding a role-playing dimension
38. **Graded Assignment:** Knowledge check: DAX and table relationships
39. **Reading:** Additional resources: DAX and table relationships
40. **Video:** The importance of time intelligence
41. **Video:** Using DAX for summarization over time
42. **Video:** Using DAX for comparison over time
43. **Reading:** Additional time intelligence functions
44. **Reading:** Exercise: Using time intelligence to compare to previous year
45. **Graded Assignment:** Self-review: Using time intelligence to compare to previous year
46. **Reading:** Exemplar: Using time intelligence to compare to previous year
47. **Video:** Setting up a common date table using DAX
48. **Video:** Setting up a common date table with M and Power Query
49. **Reading:** Activity: Set up a common date table
50. **Video:** Time intelligence in business
51. **Graded Assignment:** Knowledge check: Time intelligence calculations in DAX
52. **Video:** Module summary: Using DAX in Power BI
53. **Discussion Prompt:** Which DAX features did you find most useful?
54. **Reading:** Additional resources: Time intelligence and calculations in DAX

Graded: Module quiz: Using DAX in Power BI

Module 3

Optimize a model for performance in Power BI
This module explores the optimization process and examines the tools and methods to achieve this in Power BI, including using performance analyzer and DirectQuery features. This module also dives deeper into DAX and its use in the real world.
10 videos, 12 readings

1. **Video:** What is optimization and why is it necessary?
2. **Video:** Optimization by example
3. **Video:** Identifying and reducing cardinality levels
4. **Video:** Resolving performance issues in the data model
5. **Reading:** Exercise: Improving data model performance
6. **Graded Assignment:** Self-Review: Improving data model performance
7. **Reading:** Exemplar: Improving data model performance
8. **Reading:** Optimizing columns and metadata
9. **Reading:** Optimizing the Auto date/time feature
10. **Reading:** Activity: Optimizing the columns and Auto date/time
11. **Graded Assignment:** Knowledge check: Optimize a model for performance in Power BI
12. **Reading:** Additional resources: Optimize performance in a Power BI model
13. **Video:** Behavior and limitations of DirectQuery connections
14. **Video:** Optimizing DirectQuery performance with query reductions
15. **Video:** Optimizing DirectQuery performance with table storage
16. **Reading:** Walk-through: Optimizing a DirectQuery model
17. **Graded Assignment:** Knowledge check: Optimize DirectQuery models
18. **Reading:** Additional resources: Optimize DirectQuery models
19. **Video:** What are aggregations and why use them?
20. **Video:** Creating an aggregation
21. **Reading:** Exercise: Adding an aggregation
22. **Graded Assignment:** Self-review: Adding an aggregation
23. **Reading:** Exemplar: Adding an aggregation
24. **Reading:** How to manage aggregations step-by-step
25. **Graded Assignment:** Knowledge check: Create and manage aggregations
26. **Video:** Module summary: Optimize a model for performance in Power BI
27. **Discussion Prompt:** How would performance and optimization impact different stakeholders?
28. **Reading:** Additional resources: Create and manage aggregations

Graded: Module quiz: Optimize a model for performance in Power BI

Module 4

Final project and assessment: Modeling data in Power BI

In this module, you will be assessed on the key skills covered in the course. This module summarizes the course and reflects on the primary learning objectives. The module also contains the project for the course, which encapsulates the learning into a practical whole.

2 videos, 4 readings

1. **Video:** Course recap: Modeling data in Power BI
2. **Reading:** About the final project and assessment: Modeling data in Power BI

3. **Reading:** Exercise: Building and optimizing a data model
4. **Reading:** Exemplar: Building and optimizing a data model
5. **Video:** Congratulations!
6. **Discussion Prompt:** Reflect on learning
7. **Reading:** Next steps

Graded: Self-review: Building and optimizing a data model
Graded: Course quiz: Modeling data in Power BI