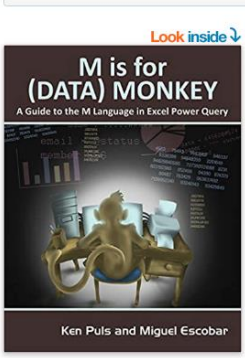
Business Intelligence using PowerQuery (M) and Functional DAX in PowerBI and Excel



https://www.skillwave.training/courses/power-query-essentials/

Skillwave wanted to expand and streamline the offer, so they have set up a coupon code that will allow *anyone* with a *@qmail.cuny.edu or *@qc.cuny.edu email address to register in the Power Query Academy Bundle for just $35 USD for the first year, instead of the regular price of $350.

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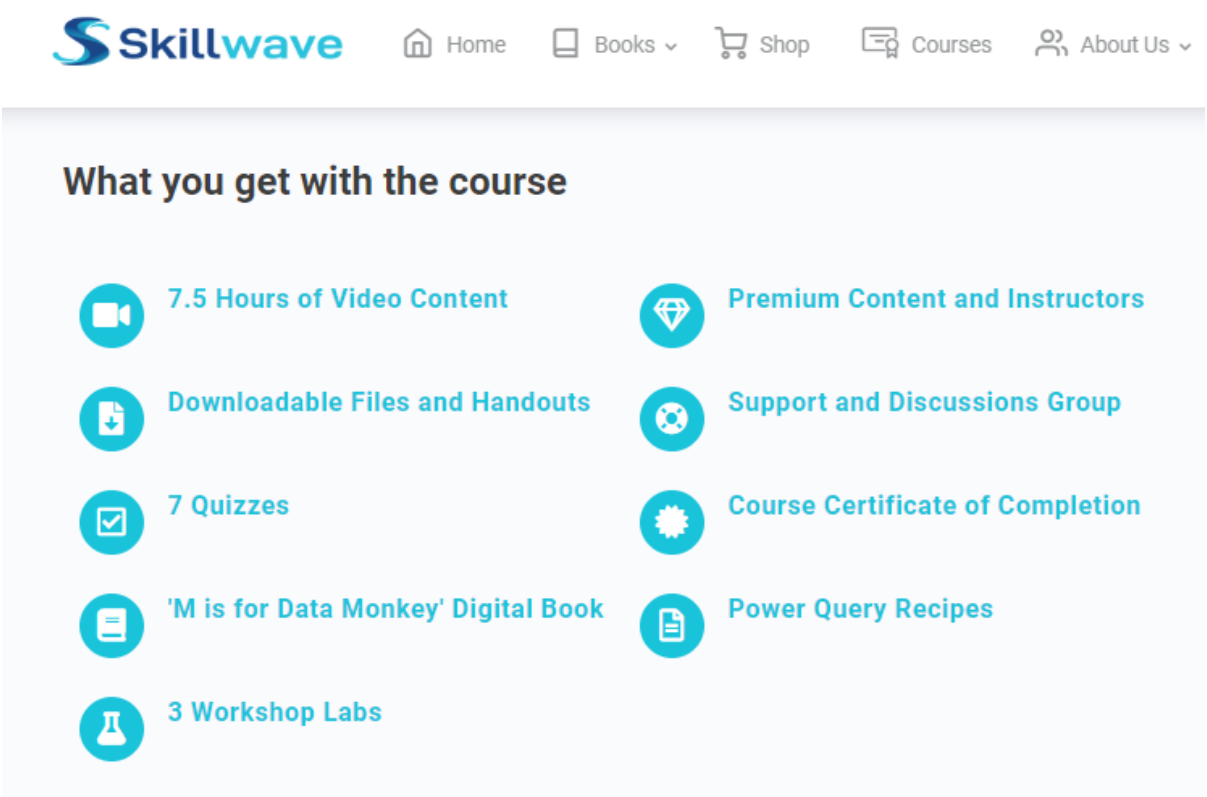
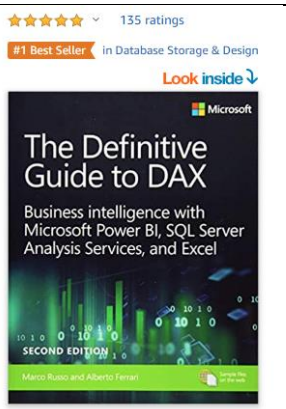
PowerQuery Topics from the Online training and the Book





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ISBN-10: 1509306978

Course Topics from the Books

WEEK#	ASSIGNMENTS DUE
Week 1	Review SQL, PowerQuery and Class Prerequisites
Week 2	Read Chapters 1,2 and PowerQuery
Week 3	Read Chapter 3
Week 4	Read Chapter 4
Week 5	Continuation Chapter4
Week 6	Read Chapter 5
Week 7	Continuation Chapter 5
Week 8	Read Chapter 6
Week 9	MID-TERM & MID-TERM EXAM #1
Week 10	Read Chapter 7
Week 11	Read Chapter 9
Week 12	Continuation Chapter 9
Week 13	Read Chapter 10
Week 14	Read Chapter 11
Week 15	Chapter 12
Week 15	Final

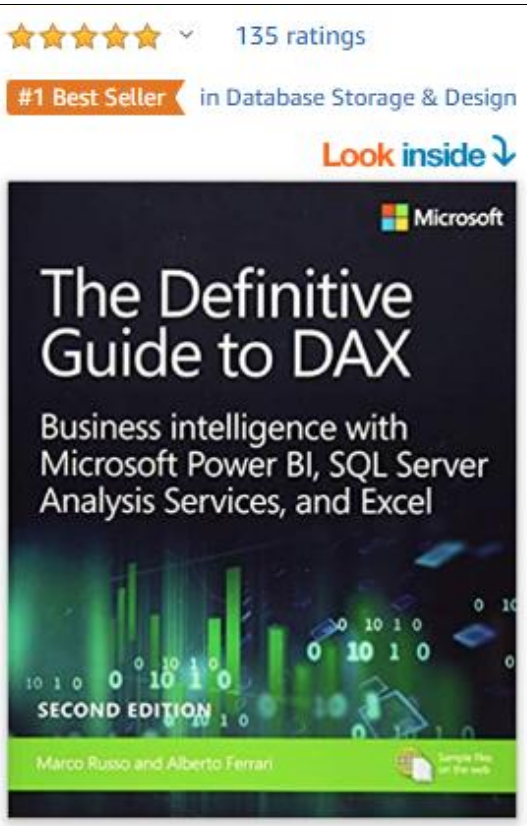
Online & COVID19 Special	All online classes requirement is that your camera and microphone are always on during each class so that you can be there in virtually in-person. It will help to make the class interactive and more personal. You will be required to share your desktop on request.
Title	Business Intelligence
Description	To help facilitate problem resolution with the business users and IT. Providing insight into business's data through the use of analytics. The student will recognize and understand how the line of service operates to help provide insightful recommendations through the use of the data. This course focuses on business intelligence to solve business problems. The information technology approach is to use Microsoft's Business Intelligence tools: 1. Research and dissect the visualizations, DAX code, Calculated columns and tables from various professional PBIX files. Apply the understanding to your own projects. 2. Understanding the differences between traditional OLTP and columnar databases. 3. Client-side loading external data sources to form a client-side data warehouse that (ETL (extract transform and load using PowerQuery (M)) evolving the creation of various staging queries to shape data efficiently into a BISM (Business Modeling Sematic Model) data model.

	4. Applying parallels from CSCI331 Relational database SQL skills to functional programming in DAX (Data Analysis Expressions) for PowerBI or PowerPivot. 5. Data Analysis eXpressions (DAX) to create calculated columns, measures and virtual tables using skills learned within the prerequisites. 6. Create Pivot tables, Charts and Key Point Indicators (KPI). 7. PowerBI Desktop and PowerPivot Excel 2019 or better to prototype BISM models. 8. Use techniques to slice and dice the decision support data to provide the macro to micro perspectives for the business user. 9. Building and implementing relational databases. Students will actively participate in this course through class discussions, project preparation and PowerPoint presentations, and visual tool utilization.
Learning Goals	Upon successful completion of this course, students will be able to: • Document code, explain the code and the analysis with PowerBI, PowerPoint and MP4 videos. • Create Client side ETL through PowerQuery in Excel and PowerBI. • Develop Measures, Calculated Columns and Tables through the use of DAX. • Develop Business Intelligence solutions through critical thinking skills in a professional work environment as team member or lead. • Articulate modern concepts, theories, and research in the field of Business Intelligence (BI). • Apply BI enabling technologies in organizational settings.
Grades	Your final grade in the class will be calculated as follows: ✓ 15% Homework Projects ✓ 15% Quizzes ✓ 30% Midterm Exam or Project ✓ 30% Final Exam or Project ✓ 10% Class participation
Exam Policy	The midterm exam will be administered in class sometime in the middle of the semester. The date will be announced in the first few weeks of the semester. There is no scheduled make-up for the exam; so, if for some reason you are unable to attend the exam, you should contact the instructor ahead of time to discuss the circumstances.

	The final exam will occur during the final exam period of the semester or on the last day of class.
Class Participation Policy	Your class participation grade will be determined based on your attendance and active participation in class throughout the semester[1]. Participating in discussions, answering questions, reading the textbook before class, and participating during in-class activities are all good ways to show "active participation." There are also CUNY/Queens College policies that can become applicable if there is an excessive number of lateness or absences. Being considerate of your fellow students in the classroom is also an important part of your "class participation" grade. You can do this by not causing a distraction for your fellow classmates -- you can remember to turn off your cell phone before class, arrive on time for class, avoid side conversation or noise during class, etc. A good learning environment is also one in which everyone feels welcome and comfortable; so, please be respectful of the diversity of backgrounds, beliefs, and lifestyles of the students in our class.
Textbook Policy	We will be following the organization and terminology of the textbook throughout the semester. (We will be covering some topics in a different order than they are presented in the textbook -- see the "COURSE TOPICS" section below.) You are required to read the relevant chapters of the textbook and work on the demos associated with each chapter before each class.
Grading Questions	Your grades will be posted on Blackboard during the semester. If you have specific questions about your grade on an assignment or exam, then the best way to proceed is to send an e-mail with your question to the instructor. You should mention which problem/question you are referring to, and you should discuss why you feel the grade should be reexamined
Lecture Slides	Slides will **not appear** in the Course Documents page of the Blackboard site. Homework must be submitted on time. Late homework will be accepted but the grade is zero.
Assignments	Assignments will be posted on the class page on Blackboard as they are announced. Tentatively, there will be either two or three homework projects for the semester. (Each would be worth 10 to 15% of the final grade.) Each project will require you to do an independent analysis and documented that provides answers to the problem. Create a PowerBI solution that use or implement the DAX syntax and potential SQL integration of the imported data. we will discuss this in class.

[1] During the COVID19 pandemic, you are required to have a functioning camera and microphone.

	Assignments will appear in the Assignments page of the Blackboard site.
Homework Projects	Homework projects will be handed out in class and posted on the course page on Blackboard. Unless otherwise specified, homework is due at the beginning of class. (Depending on the assignment, some homework may be submitted via Blackboard and some may be submitted as a paper copy in class.)
Academic Integrity Policy	Student Conduct: https://www.qc.cuny.edu/StudentLife/services/studev/Pages/default.aspx This complete explanation of the criteria for the academic integrity policy is below: https://www.cuny.edu/about/administration/offices/legal-affairs/policies-procedures/academic-integrity-policy/
RESOURCES	The textbook for the course is your primary resource for background information about the DAX programming language that we will be learning about. Also, Skillwave has tutorials on PowerQuery and EnterpriseDNA has PowerBI and DAX Tutorials for further reinforcement of the material. Logging-In to the Blackboard Online Course System: http://qcpages.qc.edu/edtech/Blackboard/loggingOn.html Information about Using Blackboard: http://qcpages.qc.edu/edtech/Blackboard/students.html Supplemental information Websites:
Textbooks	1. The Definitive Guide to DAX: Business intelligence with Microsoft Excel, SQL Server Analysis Services, and Power BI (Business Skills) 2nd Edition (**Pearson Microsoft Press**) Buy book and/or download the eBooks



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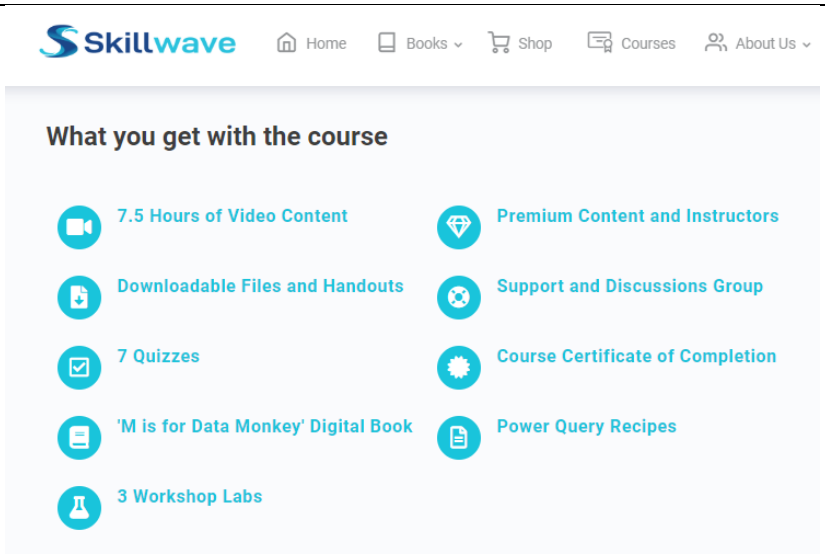

2. Optional Books

   a. https://exceleratorbi.com.au/books-summary/
   b. ***Supercharge Power BI: Power BI is Better When you Learn to Write DAX***
   c. DAX Patterns 2015 Edition
      ISBN-13: 978-1505623635
      ISBN-10: 1505623634

Software

1. **Windows 10 Pro Version 2004 (Latest)**
2. Office 2019 64 bit
3. http://bit.ly/CSCI331-DockerStuff (Howto setup Docker)
4. SQL Server 2019 Developer Edition using DOCKER
5. PowerBI desktop 64 Bit.
6. DAX Studio

Continued on the next page

7. PowerBI Tools Utilities on https://www.sqlbi.com/tools/

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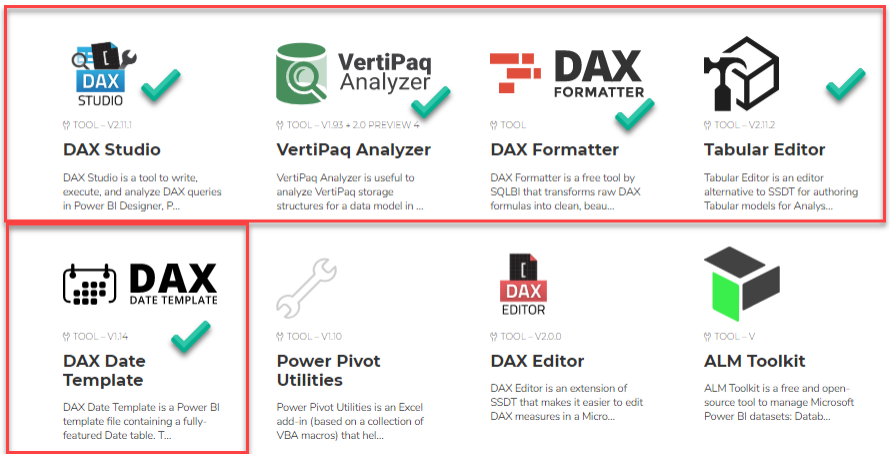

Note: All software must be installed for the first day of class</td>
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<td>Data</td>
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1. Class Databases will be provided for Docker & SQL Server 2019
2. NYC OpenData (https://nycopendata.socrata.com)
3. Microsoft AdventureWorks2017 (https://www.microsoft.com/en-us/download/details.aspx?id=49502)
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