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| Tema | Querying and Programming MS SQL Server 2012 |
| Universidad | Universidad Nacional Autónoma de Nicaragua (UNAN)  Facultad de Educación e Idiomas  Dpto. Tecnología Educativa |
| Contenido | El plan es abordar el contenido de:   * [Training Kit (Exam 70-461) Querying Microsoft SQL Server 2012 (MCSA)](https://www.microsoftpressstore.com/store/training-kit-exam-70-461-querying-microsoft-sql-server-9780735666054) * [Querying Microsoft SQL Server 2012 Databases Jump Start](https://www.microsoftvirtualacademy.com/en-US/training-courses/querying-microsoft-sql-server-2012-databases-jump-start-8241)  |  |  | | --- | --- | | Google Drive | <https://goo.gl/MpRWWS>  **eBooks\Microsoft Press Training Kit Exam 70-461** | | EVA de la UNAN | <http://www.teav.unan.edu.ni/posgrado/av/>  Encargado de crear las cuentas en Moodle:  Erika Velasquez <evelasquez@unan.edu.ni> | | Videos | Encuentro 01; <https://www.youtube.com/watch?v=aNXGS7nTSso>  Encuentro 02; <https://www.youtube.com/watch?v=3aezrnPOi5w> |   A los participantes se les creara una cuenta en la plataforma de [EVA](http://www.teav.unan.edu.ni/posgrado/av/) de la UNAN.  Este curso les dará un impulso a los estudiantes que desean certificarse en Microsoft. Especialmente en la certificación [Exam 70-461 Querying Microsoft SQL Server 2012](https://www.microsoft.com/learning/en-us/exam-70-461.aspx)  Al final del curso habrá exámenes de ejemplos similares a los que se aplican en realidad. |
| Requisitos | 1. Tener instalado [SQL Server](https://msdn.microsoft.com/en-us/sqlserver2014express.aspx) 2012 o superior;   <https://msdn.microsoft.com/en-us/sqlserver2014express.aspx>  Download Microsoft SQL Server 2014 Express  Express (SQLEXPR)  SQL Server Management Studio Express (SQLManagementStudio)   1. Bajar e instalar la base de datos [TSQL2012](http://tsql.solidq.com/books/tk70461/) 2. Saber programar. Es un plus si ha recibido clases de Bases de Datos. |
| Fecha | 2/Junio/2016 - 4/Agosto/2016  Los Jueves de 5:30 pm – 7:30 pm (GMT-6) (Hora de Nicaragua)    Los últimos dos (2) días los queremos hacer presencial en la UNAN. La idea es llevar una máquina virtual (VMWare) en SuSe con MySQL, PostgreSql y Oracle. |
| Lugar | De forma virtual utilizando el software [Streaming](https://www.youtube.com/) de youtube |
| Instructor | [Carlos.Flores.Roman@gmail.com](mailto:Carlos.Flores.Roman@gmail.com); |
| Modo | Se enviará un correo conteniendo el vínculo para ver el streaming en línea.  Durante las fechas definidas el curso será presencial (síncrono). Los días de clases se grabaran y se podrán a su disposición por si los quieren utilizar posteriormente (de forma asíncrona). |
| Costo | **No** tiene costo alguno. Es un esfuerzo de compartir los conocimientos y poder ser profesionales más competitivos. |
| Necesidad | Los interesados de forma individual llenar el formulario: <http://goo.gl/forms/vm1gKbshLz>  Los coordinadores por Universidad favor levantar el listado y enviarlo por email. Deben de contener la siguiente información:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | País | Universidad | Nombres | Apellidos | Correo | Celular | |  |  |  |  |  |  | |  |  |  |  |  |  | |  |  |  |  |  |  | |

# Anexos

## Anexo A: Contenido ([Training Kit (Exam 70-461) Querying Microsoft SQL Server 2012 (MCSA)](http://www.amazon.com/gp/product/0735666059?keywords=Training-Kit-Exam-70-461-Microsoft&qid=1443737704&ref_=sr_1_1&sr=8-1))

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| Fecha | Contenido | Actividades[[1]](#footnote-1) | Evaluación[[2]](#footnote-2) |
| 2/Junio/2016 | 1. Chapter 1 Foundations of Querying    1. Lesson 1: Understanding the Foundations of T-SQL       1. Evolution of T-SQL       2. Using T-SQL in a Relational Way       3. Using Correct Terminology    2. Lesson 2: Understanding Logical Query Processing       1. T-SQL As a Declarative English-Like Language       2. Logical Query Processing Phases 2. Chapter 2 Getting Started with the SELECT Statement    1. Lesson 1: Using the FROM and SELECT Clauses       1. The FROM Clause       2. The SELECT Clause       3. Delimiting Identifiers    2. Lesson 2: Working with Data Types and Built-in Functions       1. Choosing the Appropriate Data Type       2. Choosing a Data Type for Keys       3. Date and Time Functions       4. Character Functions       5. CASE Expression and Related Functions |  |  |
| 9/Junio/2016 | 1. Chapter 3 Filtering and Sorting Data    1. Lesson 1: Filtering Data with Predicates       1. Predicates, Three-Valued Logic, and Search Arguments       2. Combining Predicates       3. Filtering Character Data       4. Filtering Date and Time Data    2. Lesson 2: Sorting Data       1. Understanding When Order Is Guaranteed       2. Using the ORDER BY Clause to Sort Data    3. Lesson 3: Filtering Data with TOP and OFFSET-FETCH       1. Filtering Data with TOP       2. Filtering Data with OFFSET-FETCH 2. Chapter 4 Combining Sets    1. Lesson 1: Using Joins       1. Cross Joins       2. Inner Joins       3. Outer Joins       4. Multi-Join Queries    2. Lesson 2: Using Subqueries, Table Expressions, and the APPLY       1. Operator       2. Subqueries       3. Table Expressions       4. APPLY    3. Lesson 3: Using Set Operators       1. UNION and UNION ALL       2. INTERSECT       3. EXCEPT |  |  |
| 16/Junio/2016 | 1. Chapter 5 Grouping and Windowing    1. Lesson 1: Writing Grouped Queries       1. Working with a Single Grouping Set       2. Working with Multiple Grouping Sets    2. Lesson 2: Pivoting and Unpivoting Data       1. Pivoting Data       2. Unpivoting Data    3. Lesson 3: Using Window Functions       1. Window Aggregate Functions       2. Window Ranking Functions       3. Window Offset Functions 2. Chapter 6 Querying Full-Text Data    1. Lesson 1: Creating Full-Text Catalogs and Indexes       1. Full-Text Search Components       2. Creating and Managing Full-Text Catalogs and Indexes    2. Lesson 2: Using the CONTAINS and FREETEXT Predicates       1. The CONTAINS Predicate       2. The FREETEXT Predicate    3. Lesson 3: Using the Full-Text and Semantic Search       1. Table-Valued Functions       2. Using the Full-Text Search Functions       3. Using the Semantic Search Functions |  |  |
| 23/Junio/2016 | 1. Chapter 7 Querying and Managing XML Data    1. Lesson 1: Returning Results As XML with FOR XML       1. Introduction to XML       2. Producing XML from Relational Data       3. Shredding XML to Tables    2. Lesson 2: Querying XML Data with XQuery       1. XQuery Basics       2. Navigation       3. FLWOR Expressions    3. Lesson 3: Using the XML Data Type       1. When to Use the XML Data Type       2. XML Data Type Methods       3. Using the XML Data Type for Dynamic Schema 2. Chapter 8 Creating Tables and Enforcing Data Integrity    1. Lesson 1: Creating and Altering Tables       1. Introduction       2. Creating a Table       3. Altering a Table       4. Choosing Table Indexes    2. Lesson 2: Enforcing Data Integrity       1. Using Constraints       2. Primary Key Constraints       3. Unique Constraints       4. Foreign Key Constraints       5. Check Constraints       6. Default Constraints |  |  |
| 30/Junio/2016 | 1. Chapter 9 Designing and Creating Views, Inline Functions, and Synonyms    1. Lesson 1: Designing and Implementing Views and Inline Functions       1. Introduction       2. Views       3. Inline Functions    2. Lesson 2: Using Synonyms       1. Creating a Synonym       2. Comparing Synonyms with Other Database Objects 2. Chapter 10 Inserting, Updating, and Deleting Data    1. Lesson 1: Inserting Data       1. Sample Data       2. INSERT VALUES       3. INSERT SELECT       4. INSERT EXEC       5. SELECT INTO    2. Lesson 2: Updating Data       1. Sample Data       2. UPDATE Statement       3. UPDATE Based on Join       4. Nondeterministic UPDATE       5. UPDATE and Table Expressions       6. UPDATE Based on a Variable       7. UPDATE All-at-Once    3. Lesson 3: Deleting Data       1. Sample Data       2. DELETE Statement       3. TRUNCATE Statement       4. DELETE Based on a Join       5. DELETE Using Table Expressions |  |  |
| 7/Julio/2016 | 1. Chapter 11 Other Data Modification Aspects    1. Lesson 1: Using the Sequence Object and IDENTITY Column Property.       1. Using the IDENTITY Column Property       2. Using the Sequence Object    2. Lesson 2: Merging Data       1. Using the MERGE Statement    3. Lesson 3: Using the OUTPUT Option       1. Working with the OUTPUT Clause       2. INSERT with OUTPUT       3. DELETE with OUTPUT       4. UPDATE with OUTPUT       5. MERGE with OUTPUT       6. Composable DML 2. Chapter 12 Implementing Transactions, Error Handling, and Dynamic SQL    1. Lesson 1: Managing Transactions and Concurrency       1. Understanding Transactions       2. Types of Transactions       3. Basic Locking       4. Transaction Isolation Levels    2. Lesson 2: Implementing Error Handling       1. Detecting and Raising Errors       2. Handling Errors After Detection    3. Lesson 3: Using Dynamic SQL       1. Dynamic SQL Overview       2. SQL Injection       3. Using sp\_executesql |  |  |
| 14/Julio/2016 | 1. Chapter 13 Designing and Implementing T-SQL Routines    1. Lesson 1: Designing and Implementing Stored Procedures       1. Understanding Stored Procedures       2. Executing Stored Procedures       3. Branching Logic       4. Developing Stored Procedures    2. Lesson 2: Implementing Triggers       1. DML Triggers       2. AFTER Triggers       3. INSTEAD OF Triggers       4. DML Trigger Functions    3. Lesson 3: Implementing User-Defined Functions       1. Understanding User-Defined Functions       2. Scalar UDFs       3. Table-Valued UDFs       4. Limitations on UDFs       5. UDF Options       6. UDF Performance Considerations 2. Chapter 14 Using Tools to Analyze Query Performance    1. Lesson 1: Getting Started with Query Optimization       1. Query Optimization Problems and the Query Optimizer       2. SQL Server Extended Events, SQL Trace, and SQL Server Profiler    2. Lesson 2: Using SET Session Options and Analyzing Query Plans       1. SET Session Options       2. Execution Plans    3. Lesson 3: Using Dynamic Management Objects       1. Introduction to Dynamic Management Objects       2. The Most Important DMOs for Query Tuning |  |  |
| 21/Julio/2016 | 1. Chapter 15 Implementing Indexes and Statistics    1. Lesson 1: Implementing Indexes       1. Heaps and Balanced Trees       2. Implementing Nonclustered Indexes       3. Implementing Indexed Views    2. Lesson 2: Using Search Arguments       1. Supporting Queries with Indexes       2. Search Arguments    3. Lesson 3: Understanding Statistics       1. Auto-Created Statistics       2. Manually Maintaining Statistics 2. Chapter 16 Understanding Cursors, Sets, and Temporary Tables    1. Lesson 1: Evaluating the Use of Cursor/Iterative Solutions vs. Set-Based Solutions       1. The Meaning of “Set-Based”       2. Iterations for Operations That Must Be Done Per Row       3. Cursor vs. Set-Based Solutions for Data Manipulation Tasks    2. Lesson 2: Using Temporary Tables vs. Table Variables       1. Scope       2. DDL and Indexes       3. Physical Representation in tempdb       4. Transactions       5. Statistics |  |  |
| 28/Julio/2016 | 1. Chapter 17 Understanding Further Optimization Aspects    1. Lesson 1: Understanding Plan Iterators       1. Access Methods       2. Join Algorithms       3. Other Plan Iterators    2. Lesson 2: Using Parameterized Queries and Batch Operations       1. Parameterized Queries       2. Batch Processing    3. Lesson 3: Using Optimizer Hints and Plan Guides       1. Optimizer Hints       2. Plan Guides   Ejecutar consultas en una máquina virtual (VmWare) una instalación de Oracle |  |  |
| 4/Agosto/2016 | Ejecutar consultas en una máquina virtual (VmWare) una instalación de MySQL y PostreSQL |  |  |

Para las dos últimas actividades, igual que en las anteriores se dejaran una serie de consultas que deberán de ser suministrada en el EVA.

1. **Streaming**: Se realizara una presentación una presentación de PowerPoint que actualmente se encuentran en EVA y Google Drive. Asi mismo se transmitirá la clase en línea utilizando el streaming de YouTube. La clase quedara en grabada para las personas que desean ver la clase posteriormente. La case es practica por lo que se abrirá el “SQL Server Management Studio” donde se realizaran las consultas.

   **Foros en línea:** Se abrirá una entrada por cada capítulo para abordar las consultas. [↑](#footnote-ref-1)
2. Se asignara una tarea que deberá de ser cargada al Entorno Virtual (EVA). [↑](#footnote-ref-2)