

# Department Master Syllabus

**Camden County College**

**Blackwood, New Jersey**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Number:**  CIS-234 | | **Course Title:**  SQL Server on Linux | | | |
| **Department/Program:** Computer Information Systems | | | | | |
| **Date of Review:** Click here to select a month. | | Click here to select a year. | | | |
| (This Department Master Syllabus has been examined by the program/department faculty members and it is decided that no revision is necessary at this time.) | | | | | |
| **Date of Revision:** New Course, September | | | | 2021 | |
| (This Department Master Syllabus has been examined by the program/department faculty members and it is decided a change requiring a revision is necessary at this time.) | | | | | |
| N.B. A change to the course materials alone (textbooks and/or supplementary materials) may not constitute a revision. Any other change to the items listed below on this form is considered a revision and requires approval by the department/program faculty at a department/program meeting and by the division at a Chairs and Coordinator meeting. | | | | | |
| **Credits:** 3 | | | | | |
| **Contact Hours** | **Lecture:** 3 | | **Lab:** 0 | | **Other:** 0 |
| Prerequisites: None | | | | | |
| Co-requisites: None | | | | | |
| Course Description: This course will guide the student to setting up and implementing a SQL Server solution on the open source Linux platform. Students will start by understanding how SQL Server can be installed on supported and unsupported Linux distributions. Then they will brush up their SQL Server skills by creating and querying database objects and implementing basic administration tasks to support business continuity, including security and performance optimization. By the end of this course, the student will be able to recognize and utilize the full potential of setting up an efficient SQL Server database solution in their Linux environment. | | | | | |
| **Student Learning Outcomes (SLOs)**  Course specific student learning outcomes  Upon completion of this course the student will be able to:   * Understand how SQL Server 2017 on Linux works as assessed by quizzes, homework and projects. * Install and configure SQL Server on Linux as assessed by quizzes, homework and projects. * Learn Linux Administration as assessed by quizzes, homework and projects. * Troubleshoot and tune query performance in SQL Server as assessed by quizzes, homework and projects. * Learn what is new in SQL Server 2019 as assessed by quizzes, homework and projects. * Work with adaptive query processing and automatic tuning techniques as assessed by quizzes, homework and projects. * Implement high availability and disaster recovery for SQL Server on Linux as assessed by quizzes, homework and projects. * Learn the security features available in SQL Server as assessed by quizzes, homework and projects.   As assessed by:  Quizzes, projects and homework. | | | | | |
| **General Education Student Learning Outcomes**  If this course has applied for General Education Elective Status the general education student learning outcomes listed below must exactly match those the sponsor has identified on the General Education Request form.  General Education SLOs:  N/A  As assessed by:  N/A | | | | | |
| **Program Learning Outcomes**  List all course level student learning outcomes that interconnect to a particular program learning outcome.  Foster public awareness and understanding of computing, related technologies, and the need for ethical behavior in the use of them personally, locally, nationally, and globally.  Describe the assessment of the interconnected program learning outcome(s).  To be determined by department/program faculty | | | | | |
| **Course Outline:**   1. SQL Server on Linux: Getting Started 2. Creating a Virtual Machine 3. Installing SQL Server 4. Configuring SQL Server 5. Connecting to SQL Server 6. Installing Additional Components 7. Installing on Ubuntu 8. Installing on SUSE Linux Enterprise Server 9. Uninstalling SQL Server 10. How SQL Server on Linux Works 11. The Sybase Years 12. SQLOS 13. The Industry Changes 14. Project Helsinki 15. A Virtualization Surprise 16. Drawbridge 17. SQLPAL 18. Linux for the SQL Server Professional 19. Getting Started 20. Files and Directories 21. Additional Commands 22. Permissions 23. Bash Shell 24. Services Management 25. Software Management 26. Disk Management 27. System Monitoring 28. SQL Server Configuration 29. The mssql-conf Utility 30. Linux Settings 31. SQL Server Configuration 32. SQL Server Query Tuning and Optimization 33. Query Performance 34. Query Processor Architecture 35. Execution Plans 36. Query Troubleshooting 37. Indexes 38. Statistics 39. Parameter Sniffing 40. Query Processor Limitations 41. Chapter 6 New Query Processing Features 42. Adaptive Query Processing 43. Automatic Tuning 44. SQL Server 2016 Service Pack 1 45. USE HINT Query Option 46. CXPACKET and CXCONSUMER Waits 47. Wait Statistics on Execution Plans 48. Recent Announcements 49. High Availability and Disaster Recovery 50. SQL Server High-Availability and Disaster-Recovery Features 51. Always On Availability Groups 52. Availability Groups on Windows vs. Linux 53. Implementing Availability Groups 54. Security 55. Introduction to Security on SQL Server 56. Transparent Data Encryption 57. Always Encrypted 58. Row-Level Security 59. Dynamic Data Masking | | | | | |
| **Course Activities:**    The classroom activities will include formal and informal lectures and discussion sessions. During lectures, new material, assigned readings and case studies will be examined. Students are encouraged to contribute to the discussion and to ask questions about the material. | | | | | |
| **Course Materials:**  Textbook(s): TBA  Supplemental Materials: TBA  Software Licenses: N/A  Computers: Yes | | | | | |
| **Course Assessment Plan**  How often and by what means will the effectiveness of this course as part of the curriculum be assessed?    To be determined by department/program faculty | | | | | |