

**SCHOOL OF COMPUTER TECHNOLOGY**

# COMP 3066 Unix System Administration

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| **Credit Hours:** | **3** | **Contact Hours:** | **42** | **Plar Eligible:** [] Yes [ ] **No** | | |
| **Prerequisites:** | COMP 3044 | | | | **Corequisites:** | None |
| **Effective Date:** | September 2019 | | | | | |

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| **Instructor/s** | **Email** | **Phone 416-415-5000 / Room** |
| **Nikolai Ivanov** | nivanov@georgebrown.ca | EX. (C430) |
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**NOTE TO STUDENTS: Academic Departments at George Brown College will NOT retain historical copies of Course Outlines. We urge you to retain this Course Outline for your future reference.**

FOR OFFICE USE ONLY

ORIGINATOR\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**SIGNATURE DATE**

**CHAIR:** **Albert Danison**   **SIGNATURE DATE**

**DATE OF REVISION:**  **-----------------------**\_

**EQUITY STATEMENT: George Brown College values the talents and contributions of its students, staff and community partners and seeks to create a welcoming environment where equity, diversity and safety of all groups are fundamental. Language or activities which are inconsistent with this philosophy violate the College policy on the Prevention of Discrimination and Harassment and will not be tolerated. The commitment and cooperation of all students and staff are required to maintain this environment. Information and assistance are available through your Chair, Student Affairs, the Student Association or the Human Rights Advisor.**

**George Brown College is dedicated to providing equal access to students with disabilities.  If you require academic accommodations visit the Disability Services Office or the Deaf and Hard of Hearing Services Office on your campus.**

STUDENT RESPONSIBILITIES: Students should obtain a copy of the *Student Handbook* and refer to it for additional information regarding the grading system, withdrawals, exemptions, class assignments, missed tests and exams, supplemental privileges, and academic dishonesty. Students are required to apply themselves diligently to the course of study, and to prepare class and homework assignments as given. Past student performance shows a strong relationship between regular attendance and success.

COURSE DESCRIPTION:

This course is designed to familiarize the student with the administration of a UNIX Server. Students will learn how to perform advanced administration tasks on SUSE Linux Enterprise Server 9 such as installation and manual configuration, performance tuning, backup and recovery services. Students will learn basic script elements as well as advanced scripting techniques using Bash Shell. Tools to automate the administration tasks will be discussed in detail.

**ESSENTIAL EMPLOYABILITY SKILLS:**

As mandated by the Ministry of Training, Colleges and Universities essential employability skills (EES) will be addressed throughout all programs of study. Students will have the opportunity to **learn (L)** specific skills, to **practice (P)** these skills, and/or **be evaluated (E)** on the EES outcomes in a variety of courses. The EES include communication, numeracy, critical thinking & problem solving, information management, interpersonal and personal skills. The faculty for this course has indicated which of the EES are either Learned (**L**), Practiced (**P**) or Evaluated (**E**) in this course:

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| Skill | **L** | **P** | **E** | Skill | **L** | **P** | **E** |
| 1. communicate clearly, concisely and correctly in the written, spoken and visual form that fulfills the purpose and meets the needs of the audience |  | X | X | 7. locate, select, organize and document information using appropriate technology and information sources |  | X | X |
| 2. respond to written, spoken or visual messages in a manner that ensures effective communication |  |  | X | 8. show respect for the diverse opinions, values, belief systems, and contributions of others |  |  |  |
| 3. execute mathematical operations accurately |  |  |  | 9. interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals |  | X | X |
| 4. apply a systematic approach to solve problems | X | X | X | 10. manage the use of time and other resources to complete projects |  | X | X |
| 5. use a variety of thinking skills to anticipate and solve problems |  |  |  | 11. take responsibility for one’s own actions, decisions and consequences |  | X |  |
| 6. analyze, evaluate, and apply relevant information from a variety of sources | X | X | X |  |  |  |  |

**COURSE OUTCOMES:**

Upon successful completion of this course the students will have reliably demonstrated the ability to:

1. Install Linux as a Server Operating System and implement important services such as DNS, Web Hosting and File Server.
2. Manage User Accounts.
3. Manage System and Service startup and shutdown.
4. Manage System Software and Processes.
5. Configure and maintain system logging activity.
6. Write simple scripts in a Shell programming language.

**DELIVERY METHODS / LEARNING ACTIVITIES:**

The instructional methods of this course are comprised of a combination of lectures, demonstrations, hands-on exercises and take-home assignments.

**LIST OF TEXTBOOKS AND OTHER TEACHING AIDS:**

**Required Textbooks**

1. Jason Eckert, Novell, Advanced SUSE Linux Enterprise Server Administration (Course 3038). Course Technology Incorporated, 2007, ISBN: 1-4188-3732-6
2. Linux Documentation Web Site ([www.tldp.org](http://www.tldp.org/))
3. Material provided by Instructor in WebCT

**Recommended Resources: None**

**TESTING POLICY:**

1. A score of zero will be recorded for a missed assignment or examination unless the student presents the Professor with official substantiation of the absence the first day she or he returns to class.
2. Students are responsible for reading the appropriate material before classes so that they may benefit from their practical activities and examples.
3. See the Missed Assessments and Late Assignments Policy as well as George Brown College policies and procedures regarding withdrawals, exemptions, attendance, class assignments, academic dishonesty and supplemental examinations (refer to <http://www.gbrownc.on.ca/Admin/VPAcad/policies/index.html>).
4. Supplemental tasks/examinations are not a right but a privilege granted by a Promotion Committee on an individual basis to students who have failed a course after attending the entire course and attempting the final examination. Individual professors do not make decisions regarding the policies of the Promotion Committee

**ASSIGNMENT POLICY:**

1. Students are responsible for keeping a back-up copy of each assignment submitted.
2. All assignments submitted should adhere to the documentation standards distributed by the professor.
3. Students should check the assignment handouts for the instructions for submission.

**EVALUATION SYSTEM:**

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| **Assessment Tool:** | **Description:** | **Outcome(s) assessed:** | **EES**  **assessed:** | **Date/Week:** | **% of Final Grade:** |
| Labs | Lab Activities | 1-6 | 4, 5, 7, 9, 10 | 1-15 | 30% |
| Quiz 1 | Multiple choice test that evaluates concepts from the topics covered in Weeks 1-3 | 1, 2, 3 | 1, 4, 5 | 4 | 5% |
| Quiz 2 | Multiple choice test that evaluates concepts from the topics covered in Weeks 9-11 | 1, 3 | 1, 4, 5 | 12 | 5% |
| MidTerm exam | Mid term exam containing Multiple choice, short answer etc questions on topics covered in weeks 1-6 | 1-2, 4 | 1, 4, 5 | 7 | 20% |
| Midterm lab test | Hands-on test from Labs done in Weeks 1-6 | 2, 3, 4 | 1, 4, 5 | 7 | 10% |
| Final Exam | Test containing Multiple choice, short answer etc questions on topics covered in weeks 9-14 | 1, 3, 5, 6 | 1, 4, 5 | 15 | 20% |
| Final Lab test | Hands-on test from Labs done in Weeks 9-14 | 1, 3, 5, 6 | 1, 4, 5 | 15 | 10% |
|  |  |  |  | **TOTAL** | **100%** |

**GRADING SYSTEM:** The passing grade for this course is: \_D (50%)

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| **A+** | **90-100** | **4.0** | **B+** | **77-79** | **3.3** | **C+** | **67-69** | **2.3** | **D+** | **57-59** | **1.3** | **Below 50** | **F** | **0.0** |
| **A** | **86-89** | **4.0** | **B** | **73-76** | **3.0** | **C** | **63-66** | **2.0** | **D** | **50-56** | **1.0** |  |  |  |
| **A-** | **80-85** | **3.7** | **B-** | **70-72** | **2.7** | **C-** | **60-62** | **1.7** |  |  |  |  |  |  |

**Excerpt from the College Policy on Academic Dishonesty:**

**The *minimal* consequence for submitting a plagiarized, purchased, contracted, or in any manner inappropriately negotiated or falsified assignment, test, report, project, or any evaluated material will be a grade of zero on that material.**

**To view George Brown College policies please go to** [**www.georgebrown.ca/policies**](http://www.georgebrown.ca/policies)

**TOPICAL OUTLINE:**

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| **Week** | **Topic / Task** | **Outcome(s)** | | **Content / Activities** | | **Resources** | | | |
| 1-2 | Installation | 1, 3 | Install and configure the SUSE Linux Enterprise Server, troubleshoot the Installation process for common Installation Problem | | Chapter 1,  Blackboard material. | |  | | |
| 3 | Network configuration | 1, 2, 3,4 | Configure the Network Manually including setting up of network devices and routing, create configuration files and test the configuration with command-line tools | | Chapter 2 | |  | | |
| 4-5 | Server setup | 1,2, 3, 6 | Configure Network Services such as DNS using BIND, Apache and Samba | | Chapter 3 | |  | | |
| 6 | Server Security | 1,2,3 | Securing a SUSE Linux Enterprise Server in areas of Physical access, Software to be installed, User Authentication and File System security | | Chapter 4 | |  | | |
| 7 | **Midterm Examination (Theory & Lab)** | | | | | | |  | |
| 8 | **INTERSESSION WEEK** | | | | | | |  | |
| 9 | Back up and recovery | 1,4,5 | Manage Backup and Recovery of the Server by developing a Backup Strategy and Usage of SLES 9 rescue system | | Chapter 5 | |  | | |
| 10-11 | Scripting | 6 | Shell scripting, Basic Script elements, Control structures, Advanced Scripting techniques and useful commands | | Chapter 6 | |  | | |
| 12 | Network Performance | 2,3,4,5 | Performance Tuning of a SLES Server by finding performance bottlenecks, reducing system and memory load and tuning the Network Performance. | | Chapter 8 | |  | | |
| 13 | Configuration management | 3-6 | Manage System Configuration of the Server in case of hardware and component changes, details of related file systems and commands | | Chapter 9 | |  | | |
| 14 | **Review** | | | | | | |  | |
| 15 | **Final Examination (Theory & Lab)** | | | | | | |  | |
| **Please note: this schedule may change as resources and circumstances require.**  For information on withdrawing from this course without academic penalty, please refer to the College Academic Calendar: [**http://www.georgebrown.ca/Admin/Registr/PSCal.aspx**](http://www.georgebrown.ca/Admin/Registr/PSCal.aspx) | | | | | | | | |  |