



Department of Computer Science
ACST 3530 – Linux Operating Systems
Course Syllabus

Online Course

Instructor	<p>Dr. Sarah M. North, Instructor Email: snorth@kennesaw.edu Cell: 678-520-6102 Office: 470-578-7774 Office: Kennesaw Campus (Chastain Pointe Suite #206) Office hours: MW 9:15am – 11:00am <i>Other hours will be on-line via D2L and/or by appointment only</i></p>
Class Design	<p>The course will be delivered as lectures and lab sessions with supporting quizzes and assignments. All lecture notes will be provided via KSU Desire2Learn Access http://d2l.kennesaw.edu/ Student-centered learning The variety of online tools draws on individual learning styles and help students become more versatile learners.</p>
Textbook & Resources	<p><u>Required:</u> Textbook: <i>Principles of Modern Operating Systems, 2nd Ed.</i> By Jose M. Garrido, Richard Schlesinger, and Ken Hoganson. Jones and Bartlett, Copyright: 2012. Textbook Link ISBN- 13: 9781449626341</p> <p><u>Recommended:</u> <i>How Linux Works, 2nd Ed.</i>, by Brian Ward, O'Reilly Publisher Company, Textbook Link ISBN – 13: 978-1593275679</p> <p><i>Operating System Concepts, 9th Edition</i>, Abraham Silberschatz, Peter B. Galvin, Greg Gagne , John Wiley, Copyright, 2012. Textbook Link ISBN: 978-1-118-55961-1</p>
Prerequisite	<p>"C" or better grade in ACST 3510 Computer Architecture and Robotics. http://ccse.kennesaw.edu/cs/programs/bscs.php</p>
Course Description	<p>This course provides a practical coverage of operating systems and networking by using Linux and widely used open source operating System. Topics discussed in this course include basic concepts of operating systems, Linux Kernel, system management basics, task scheduling, disks and devices, file systems, memory system boots, basic concepts of networking configurations/services, and shell scripts.</p>
Course Learning Outcomes	<p>After successful completion of this course, a student should be able to:</p> <ul style="list-style-type: none">• Explain the basic concepts of operating systems.• Generalize basic concepts of networking.• Illustrate Linux Operating Systems works.• Interpret system administration on a Linux Operating system.• Construct Linux networking configuration and maintenance.• Demonstrate ability to write shell scripts.

Table of Content	<p>Module 1 - Chapter 1: Basic Concepts of Operating Systems Chapter 2: Processes and Threads Appendix A: Linux Operating Systems</p> <p>Module 2 - Chapter 3: System Performance and Models Chapter 4: Systems with Multiprogramming</p> <p>Module 3 - Chapter 5: Processor Scheduling Chapter 6: Synchronization Principles</p> <p>Module 4 - Chapter 7: Deadlocks Chapter 8: File Management</p> <p>Module 5 - Chapter 9 The I/O System</p> <p>Module 6 - Chapter 10 Memory Management</p> <p>Module 7 – Chapter 11 Security and Protection</p> <p>Module 8 - Chapter 12 Networking and Distributed Systems</p>
<p>Attendance: The Instructor expects your attendance on D2L daily, minimum 2-3 time per week. Grade performance is a demonstrated function of attendance, preparation, and participation online. Students in this class should realize the nature of the course in which they are enrolled. This is an online class with no on-campus meetings scheduled. Therefore, there are no planned face-to-face interactions between students or between students and the instructor. Students are encouraged to visit the instructor on campus during office hours but this is not required. Students will interact with each other and with the instructor virtually, through online discussions in D2L, email, chat session and instructor feedback.</p> <p>It is easy to fall behind in any course, but especially in an online course where it is up to the student to formalize a time to work on course materials. In order to ensure a student does not fall behind it is STRONGLY encouraged that students keep to the schedule suggested in this syllabus [basically one course module per 2 weeks during Fall and Spring semesters and four per week during a 4-week Summer semester]. There is an activity and assignment due for every module. This is a way to keep the student focused and for the instructor to assess student progress. Students must make a concerted effort to maintain currency and not wait until the last minute to complete assignments. The course is designed to enhance student learning, but the student is ultimately responsible to ensure that the learning takes place.</p>	
<p>Evaluation criteria explained:</p> <ul style="list-style-type: none"> • Students are expected to be active participants in each course activities. Full credit for participation will be extended to students who regularly participate in discussion, share ideas, and contribute relevant personal experiences. • Examinations will consist of essay (short and long answers), multiple choices, T/F questions, technological comprehension that cover in the lecture material, and assigned readings. • Students will be given specific guidance on the amount of collaboration permitted for each assignment. 	
<p>Exams: There will be 2 primary examinations (cumulative Midterm & Final examination). The content will come from the text and other material presented in lecture sessions as well as the homework assignments. Note that material presented in PowerPoint lectures will supplement the assigned reading.</p> <p>There will be no make-up examinations. It is the student's responsibility to arrange for an excused absence before the exam. A grade of zero will be assigned for all exams missed without an excused absence. If an emergency arises on the day of a midterm, and the instructor deems that the absence is excused, then the weight of the final exam may be increased to replace the midterm.</p> <p>http://registrar.kennesaw.edu/datesanddeadlines/</p>	

Discussion:

There will be eight discussion questions within each module which reflect your weekly attendances. Students are required to participate in all discussions during the semester via D2L <http://d2l.kennesaw.edu/>

Practice Tests

Self-Check Practice Tests may be available in the modules for you to check your mastery of the subject matter. You can take these quizzes as many times and as often you wish to take. **The** practice Tests points are not counted toward your course grade (*Practice Tests*).

Assignments:

Assignments are due throughout the term and must be submitted through D2L by 11:59pm on designated due date for each assignment. Each assignment is weighted as noted in the assessment section below. You lose 20% of your score if you turn in a homework assignment late, and **late assignments** will only be accepted up to one week after the due date!

OS Individual Assignment Reports

1	LOS Reports Refer to: <ul style="list-style-type: none"> • Course Home • OS Reports Format 	The LOS assignments report format will describes the general structure of a (technical) report. Every report must include the first and last part of your ' script ' file, which is a log of your Linux session . (See Linux notes on D2L). Please refer to OS Assignments Report Format on D2L
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Student Course Evaluation:

A standard questionnaire (described below) will be administered during the last two weeks of the semester in all classes. Additional questions developed by the college or instructor(s) may be included as well. It is important that each student provide meaningful feedback to the instructor(s) so that changes can be made in the course to continually improve its effectiveness. We value student feedback about the course, our teaching styles, and course materials, so as to improve our teaching and you're learning. At a minimum, the following two questions will be asked:

1. Identify the aspects of the course that most contributed to your learning (include examples of specific materials, exercises and/or the faculty member's approach to teaching and mentoring), and
2. Identify the aspects of the course; if any that might be improved (include examples of specific materials, exercises and/or the faculty member's approach to teaching and mentoring).

Assessment Grades will be calculated as follows:

OS Assignments Reports (eight modules Assignments)	240
Discussion (eight Modules)	40
Test_1 – Midterm Exam (Comprehensive)	110
Test_2 – Final Exam (Comprehensive)	110
Total	500

Grading Scale:

Grade	Percentage	Point System
A	90% - 100%	450 - 500
B	80% - 89%	400 - 449
C	70% - 79%	350 - 399
D	60% - 69%	300 - 349
F	59% or below	299 - 0

Withdrawal Policy:

The last day to withdraw without academic penalty is [shown on the course schedule](#). Ceasing to attend

course via D2L or oral notice thereof DOES NOT constitute official withdrawal from the course. Students who simply stop participating course weekly via D2L without officially withdrawing usually are assigned failing grades. Students wishing to withdraw after the scheduled change period (add/drop) must obtain and complete a withdrawal form from the Academic Services Department in the Registrar's Office.

Incomplete Policy:

I— The grade of “I” denotes an incomplete grade for the course, and will be awarded only when the student has done satisfactory work up to the last two weeks of the semester, but for nonacademic reasons beyond his/her control is unable to meet the full requirements of the course. A grade of “I” must be removed (by completing the course requirements) within one calendar year from the end of the semester in which the “I” was originally assigned.
<http://www.kennesaw.edu/foreignlanguage/facultyinfo/IncompletePolicy.html>

Enrollment Policy:

Only those students who are enrolled in the online course may visit the lectures, receive assignments, take quizzes and exams, and receive a grade for the course via D2L. If a student is administratively withdrawn from this course, they will not be permitted to participate in any online course activities nor will they receive any grade for the course.

Email Messages:

Remember to put the course name and section number in the subject field of every e-mail message that you send me. E-mail messages that are missing this information are likely to be automatically redirected to a folder I seldom check.

Diversity Statement:

All courses offered by the Computer Science department will adhere to the KSU policy that prohibits discrimination on the basis of race, religion, color, sex, age, disability, national origin, or sexual orientation.

Disability Statement:

Any student with a documented disability needing academic adjustments is requested to notify the instructor as early in the semester as possible, and must do so before the mid-term exam. Verification from KSU disabled Student Support Services is required. All discussions will remain confidential.
http://www.kennesaw.edu/stu_dev/dsss/policies.html

Student Email and Web Account Access:

KSU is moving towards a central authentication server that will allow one username and password to be used by all KSU users to access an increasing variety of applications (email, D2L etc.) This unified network identification is referred to as your "NetID". The new source for university-provided email and web space for students will be located at students.kennesaw.edu All students will have access to this system once they have established their NetID.

How to Activate your NetID:

To activate your NetID go to <http://netid.kennesaw.edu> and click on "Sign up Now!" link. You will be asked to provide information to verify your identity and set your password. This password will only be for NETID enabled applications.

How to Look Up a NetID:

After you have activated your NetID, you can look up other users by logging into <http://netid.kennesaw.edu> and clicking on Directory Search.

How to Send Email:

For student email, your NetID in combination with the new email address would look like
<http://uits.kennesaw.edu/support/netid.php>

Web Address:

For student web address, your NETID in combination with the new server address would look like.
If you have problems please call the Service Desk at ext. 6999 or e-mail <http://uits.kennesaw.edu/services/>

Acquiring Final Grades:

In an effort to better utilize our technology resources, Kennesaw State University has instituted the reporting of end of term grades by phone. This is in addition to the web version of grades, which has been in effect for several terms. All current semester term students may call 770-420-4315 and select Option Number 4 to secure their end of term grades. With this new development, printed grade reports will not be mailed at the end of the term. Students needing verification of grades or enrollment should request either an official transcript or enrollment verification through the Office of the Registrar.

Any student with a documented disability needing academic adjustments is requested to notify the instructor as early in the semester as possible, and must do so before the mid-term exam. Verification from KSU disabled Student Support Services is required. All discussions will remain confidential.

Academic Integrity Statement:

Every KSU student is responsible for upholding the provisions of the Student Code of Conduct, as published in the Undergraduate and Graduate Catalogs. Section II of the Student Code of Conduct addresses the university's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to university materials, misrepresentation/falsification of university records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the Department of Student Conduct and Academic Integrity (SCAI), which includes either an "informal" resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct's minimum one semester suspension requirement.

Students are encouraged to study together and to work together on class assignments and lab exercises; however, the provisions of the STUDENT CONDUCT REGULATIONS, II. Academic Honesty, KSC Undergraduate Catalog will be strictly enforced in this class.

Frequently students will be provided with "take-home" exams or exercises. It is the student's responsibility to ensure they fully understand to what extent they may collaborate or discuss content with other students. No exam work may be performed with the assistance of others or outside material unless specifically instructed as permissible. If an exam or assignment is designated "no outside assistance" this includes, but is not limited to, peers, books, publications, the Internet and the WWW. If a student is instructed to provide citations for sources, proper use of citation support is expected.

Acknowledgment and Acceptance of Academic Integrity Statement:

In any academic community, certain standards and ethical behavior are required to ensure the unhindered pursuit of knowledge and the free exchange of ideas. Academic honesty means that you respect the right of other individuals to express their views and opinions, and that you, as a student, not engage in plagiarism, cheating, illegal access, misuse or destruction of college property, or falsification of college records or academic work.

As a member of the Kennesaw State University academic community you are expected to adhere to these ethical standards. You are expected to read, understand and follow the code of conduct as outlined in the KSU graduate and undergraduate catalogs. You need to be aware that if you are found guilty of violating these standards you will be subject to certain penalties as outlined in the college judiciary procedures. These penalties include permanent expulsion from KSU. Students are required to complete the Academic Integrity Quiz in D2L Vista to acknowledge the receipt of this syllabus and to acknowledge that they agree to abide by the class policies and the academic integrity policies of the University.

References:

The following books include explanations of the OO modeling and programming of the simulation models with the simulation packages:

- *Principles of Modern Operating Systems (With Illustrations Using Simulation Models)*. Second Ed. By J. M. Garrido, R. Schlesinger, and ken Hoganson. Jones and Bartlett, Boston, 2013. The book includes a set of simulation models in C++ and Java.
- *Object oriented Simulation: A Modeling and Programming Perspective*. By J. M. Garrido. Springer, 2009. Development of simulation models with OOSimL.
- *Object-oriented Discrete Event Simulation with Java*. By J. M. Garrido. (Published by Kluwer/Plenum, NY, September 2001). This book explains the construction of simulation models with PsimJ (Java implementation).
- *Performance Modeling of Operating Systems Using Object Oriented Simulation: A Practical Introduction*. By J. M. Garrido. (Published by Kluwer/Plenum, NY, September 2000). This book explains and applies the Psim1 and Psim2 (C++) simulation packages.
- *Practical Process Simulation Using Object-Oriented Techniques and C++*. By J. M. Garrido. Artech House, Boston 1999. This includes the original version of Psim with C++.

Communication Etiquette

Communication Tool	Recommendations
Communication	Please use our course D2L e-mail to communicate
Instructor Response Time	Questions submitted to the instructor via D2L email or the discussion area will receive a reply within 24 hours. Weekends may take longer. All the assignments will be graded and provide feedback within a week. Please check your course progress on " <i>D2l home page</i> ," " <i>Grade Tab</i> ."
Emergencies	In the case of an emergency, use the email or phone number that is listed in the syllabus and on the home page.
Communication in General	Please use the instructor's university email account listed on the Home page and in the syllabus. ejung4@kennesaw.edu or 470-578-5546
Communication with each other and the instructor	We want everyone to experience a positive experience in this class. Be sure when you have chats, or other types of discussions (such as with labs), that you always are respectful of each other. I will always be respectful of each of you.

Tentative Course Schedule: Subject to Change

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ACST 3530 – Linux Operating Systems - Online

Modules		Course Assignments
1	Module_1	Welcome- Login to Vista and overview http://d2l.kennesaw.edu/ Chapter 1: Basic Concepts of Operating Systems Chapter 2: Processes and Threads Assignment_1 Report - Refer to D2L for the due date Discussion- Module_1 Quiz_1 – Ch. 1 & Ch. 2 – Refer to D2L
2	Module_2	Chapter 3: System Performance and Models Chapter 4: Systems with Multiprogramming Assignment_2 Report - Refer to D2L for the due date Discussion- Module_2 Quiz_2 – Ch. 3 & Ch. 4 – Refer to D2L
3	Module_3	Chapter 5: Processor Scheduling Chapter 6: Synchronization Principles Assignment_3 Report - Refer to D2L for the due date Discussion- Module_3 Quiz_3 - Ch.5 & Ch.6 - Refer to D2L
4	Module_4	Chapter 7: Deadlocks Chapter 8: File Management Discussion- Module_4 Test_1 - Comprehensive
5	Module_5	Chapter 9: The I/O System Assignment_4 Report - Refer to D2L for the due date Discussion- Module_5 Quiz_4 - Ch.9 - Refer to D2L
6	Module_6	Chapter 10: Memory Management Assignment_5 Report - Refer to D2L for the due date Discussion- Module_6 Quiz_5 - Ch.10 - Refer to D2L
7	Module_7	Chapter 11: Security and Protection Assignment_6 Report - Refer to D2L for the due date Discussion- Module_7 Quiz_6 - Ch.11 - Refer to D2L
8	Module_8	Chapter 12: Networking and Distributed Systems Discussion- Module_8 Test_2 - Comprehensive - Refer to D2L