Instructor: Dr. Ching-yu (Austin) Huang
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Office: NAAB, Room 235   **Phone**: (908) 737-6157
Office Hours: Monday - Thursday: 9:55–10:55 am;12:20–2:00 pm; Tuesday, Thursday: 3:20 – 4:00 pm (appointment only)
Class: Monday, Wednesday (2:00 - 3:15 pm), NAAB, Room 208
Prerequisites: **Admission to MS CIS program with good programming skills   Students without prerequisite(s) must withdraw from the class.**

Week	Date		Topic	reading	Assignment	#
1	1/20/2020	Mon	**Martin Luther King Holiday**		**School closed**	
	1/22/2020	Wed	Overview class policy and OS, eve account	1, 2	**setup Linux account**	1
2	1/27/2020	Mon	Basic OS, intro to Unix, setup VM	2, 3	**setup VM**	2
	1/29/2020	Wed	Linux commands, vi, project 1	3, 4	**P1 starts – upload**	3
3	2/3/2020	Mon	Client/Server, HTML form, PHP	4, 5		4
	2/5/2020	Wed	Scripting – Shell, Python, HTML inputs	5, 6		5
4	2/10/2020	Mon	Web cgi-bin in Python, upload files	6, 7	**p1.1 for early alert**	6
	2/12/2020	Wed	More commands, environment, process	7, 8		7
5	2/17/2020	Mon	**President Day Holiday**		**School closed**	
	2/19/2020	Wed	Process, cron job, pipeline tasks, nohup, background, in Python	8, 9		8
6	2/24/2020	Mon	Integration - execute Linux programs on web, Python & PHP API	9, 10		9
	2/26/2020	Wed	Linux file system, GitHub Git	10, 11	**Project 1 due 2/29**	10
7	3/2/2020	Mon	Java programming in Linux		**P2 starts – Java**	11
	3/4/2020	Wed	Java exception, I/O, CSV API, hash table			12
8	3/9/2020	Mon	**3/9 - 15 Spring break**		**School closed**	
	3/11/2020	Wed	**3/9 - 15 Spring break**		**School closed**	
9	3/16/2020	Mon	Recursion, Java lib, debug, review midterm	13, 14		13
	3/18/2020	Wed	**Midterm**	14, 15		14
10	3/23/2020	Mon	Midterm answers, project 2	15, 16	**P2.1 progress**	15
	3/25/2020	Wed	Coding conest - Java	16, 17		16
11	3/30/2020	Mon	Integrate Java and web cgi-bin,	17, 18		17
	4/1/2020	Wed	Timeout, sendmail & web, cron job	18, 19		18
12	4/6/2020	Mon	Basic C/C++, functions, compile & run	19, 20	**Project 2 due 4/7**	19
	4/8/2020	Wed	C/C++ array, data structures, memory, pointer	20, 21	**P3 starts – C++**	20
	4/9/2020	**Thur**	**Last day to withdraw with 'W' grade**		**0% refund**	
13	4/13/2020	Mon	C/C++ call by references, values, debug	21, 22		21
	4/15/2020	Wed	C/C++, file I/O, date, exception handling	22, 23		22
14	4/20/2020	Mon	Basic Obj Oriented Programming in C++	23, 25	**P3.1 progress**	23
	4/22/2020	Wed	**Kean Research Days poster presentation, write report**			24
15	4/27/2020	Mon	C/C++, coding contest	25, 26	**coding contest**	25
	4/29/2020	Wed	C/C++ and web development, cgi-bin	26, 27		26
16	5/4/2020	Mon	Client/server prog, system service	27, 28	**Project 3 due 5/9**	27
	5/6/2020	Wed	Language performance comparison+D16	28	**Monday schedule**	28
17	5/11/2020	Mon	Presentation & submit slides			29
	5/13/2020	Tue	Presentation & submit slides			30

Late revision: 1/5/2020

- **Content**: This course covers three main components: 1. Unix/Linux system & commands, 2. scripting and complier languages, and 3. Integration of web and Linux programs. This course emphasizes both concepts and hands-on experiences. A lot of programming.
- **Textbook**: The UNIX Programming Environment. Kernighan, B. and Pike R. Prentice Hall, 1983. **ISBN-13**: 978-0139376818
    - Systems Programming in Unix/Linux. Wang, K.C., Springer, 2018. **ISBN-13:** 978-3319924281
    - Linux Command Line and Shell Scripting Bible. 3rd Ed. Blum, R. Wiley, 2015. **ISBN-13:** 978-1118983843
- **Objectives**: Upon completion of this course, students will be able to:
    A. Explain and demonstrate the Unix/Linux commands, process, utilities and tools.
    B. Utilize script and compiler languages to write applications in a Unix/Linux system.
    C. Design and develop automated programs in a Unix/Linux system.
    D. Develop and integrate web applications with programs with Unix/Linux.
- **Course Grading: 1** Midterm (25%), **3** projects (20%, 20%, 25%), **1** presentation (10%)

Class Policies:

- **This is a hands-on course. Students are required to bring personal laptop every class.**
- Instructional Methods: lecture with slides, student presentations, class discussions and exercises, and project creations.
- **A**: 100-94, **A-**: 93-89, **B+**: 88-84, **B**: 83-80, **B-**: 79-76, **C+**: 75-72, **C**: 71-68, **D**: 67-64, below 64 is failing (C or better is needed for CS and IT majors.)
- It is students' responsibilities to verify all the scores posted on **the class website** that is announced on the first day of the class.
- **Assignments should be used MySQL connecting through a Linux server that is announced on the first day of the class.**
- Mid-Term Progress information will be provided to students by the instructor via KeanWise.
- No late work will be accepted without permission in advance from the instructor. Late work is penalized.
- No make-up exams are provided without documentation of medical or family emergency. Please arrange your schedule for the next 16 weeks to arrive in class on time and prepared.
- Attendance and participation are required.
- All work turned in under your name must be your own. **No credit will be given for an assignment or homework that is copied – in part or in total – from another person**.
- Exam policy: During class examinations, if a student leaves the classroom for any reason during the exam time, **the exam must be turned in before the student departs, concluding the exam for that student**. The student cannot resume the exam on return later. You may not make or take a phone call, text or access the internet during class or a test.
- **Classes may not be audio or digitally captured**, unless permission has been granted by the instructor for that specific class.
- **Public posting of course materials from this class is prohibited**. Materials presented in the classroom are for the personal use of registered students during the semester only. Homework, programs, and other classwork should not be shared, distributed or publicized in any way, for the protection of other students and in respect of the intellectual property rights of the faculty and copyright owners.

Important University Policies and Information:

- The Kean Academic **Calendar** can be found online at https://www.kean.edu/offices/registrars-office/academic-calendar
- **Tutoring and learning Support services**: http://www.kean.edu/content/tutoring-services
- Students should review the **Student Code of Conduct**, as it discusses expectations of appropriate conduct in the classroom: https://www.kean.edu/KU/Code-of-Conduct
- Students are responsible to review and understand the University Academic Integrity Policy available via the following link: https://www.kean.edu/academic-integrity
- Read Kean **Students Rights and Responsibilities** at https://www.kean.edu/offices/disability-services/rights-and-responsibilities
- Register for the university's **emergency notification system** at https://www.kean.edu/offices/university-police-0/campus-alert
- Students must have a **valid Kean email account**. You can request one at https://www.kean.edu/~ocisweb/forms.htm
- **Title IX**: Title IX of the Education Amendments of 1972 (Title IX) prohibit discrimination on the basis of sex in education programs or activities. Sexual harassment in any form will not be tolerated at Kean University. Sexual harassment by students should be reported to the Office of Affirmative Action Programs, Office of the Vice President for Student Affairs or the Office of Community Standards and Student Conduct immediately. Information about the University's Sexual Misconduct Policy may be found at the following: https://www.kean.edu/offices/policies/sexual-misconduct-policy
- **Americans with Disabilities Statement & Non-Discrimination Statement:**
  Kean University is an affirmative action, equal opportunity institution. Students with documented disabilities who may need special instructional accommodations or who may need special arrangements in the event of an evacuation should notify the instructor as soon as possible, no later than the second week of the term. Students may contact the Office of Disability Services in Downs Hall Room 122 or call 908-737-4910 to discuss special needs.
- **Kean University Non-Discrimination Policy Statement:**
  Kean University is an affirmative action, equal opportunity institution.

Syllabus Updates: **Instructor reserve the right to change the syllabus at any time throughout the semester**. All changes will be announced in class and a new syllabus will be electronically available to all students. If you are enrolled in this class past the add/drop date you are subjected to all rules in this syllabus.