

ISIT-442 SYLABUS — Instructor: Mohsen Banan

Managing Messaging Systems

5 Credits e-mail: mohsen.banan@bellevuecollege.edu

Class Portal: <https://bc.instructure.com>

<http://mohsen.1.banan.byname.net/teaching/bc-isit442>

COURSE DESCRIPTION:

This course is an introduction to messaging and collaboration services for system administrators. Students will become familiar with popular messaging platforms and protocols such as POP3, IMAP, SMTP, and web services. Additional topics will include server virtualization, cloud services, system configuration, directory service configuration and deploying email clients.

PREREQUISITES:

- Lots Of Curiosity
- Familiarity with Unix Command Line
- Basics Of networking (OSI reference model)
- Virtualization Basics

TEXT & SOFTWARE & SUPPLIES:

This course does not require any restricted text or software. All required text and software are freely (gratis) available on the Internet.

Software: vmplayer (academically licensed version of VmWare Virtual Machine Player)

Software: Instructor supplied VM Image based on Ubuntu 16.04, which includes: emacs, wireshark, qmail, mailfront, djbdns, courier.

Internet Access and an e-mail account (provided by BC)

Libre-Halaal Manner-Of-Existence Of This Course

The entirety of lecture notes and lab material for this course are subject to “Verbatim Copying Permitted” copyright notices. Anyone, anywhere can make verbatim copies of this material and use them.

The course material is publicly available on the internet. The primary public URL for this course material is:

<http://mohsen.1.banan.byname.net/teaching/bc-isit442>

Restriction of knowledge is in conflict with pursuit and dissemination of knowledge and information.

Manner-Of-Existence of this course is **Libre-Halaal** as defined in

<http://mohsen.1.banan.byname.net/PLPC/120039>.

KEY COMPETENCIES:

After completing this class, students should be able to:

- Compare and contrast messaging service platforms
- Plan for, install, configure and manage popular messaging platforms and protocols
- Assess and select proper security measures to ensure high availability of message services
- Upgrade and optimize messaging services
- Troubleshoot messaging servers and services

EVALUATION

Students will demonstrate competency by performance on projects (major assignments), labs and participation.

Major Assignments

- org-mode structured list of messaging RFCs
- Building a Bash script for flexible batch sending of email
- Building a Bash script as a flexible mail responder
- Write a paper that describes details of transitioning an on-site hosted mail service to a cloud based service.

THE ACADEMIC DISCLAIMER STUFF:

Affirmation of Inclusion

Bellevue College is committed to maintaining an environment in which every member of the campus community feels welcome to participate in the life of the college, free from harassment and discrimination.

We value our different backgrounds at Bellevue College, and students, faculty, staff members, and administrators are to treat one another with dignity and respect.

More information is at: <http://bellevuecollege.edu/about/goals/inclusion.asp>

Student Code

“Cheating, stealing and plagiarizing (using the ideas or words of another as one’s own without crediting the source) and inappropriate/disruptive classroom behavior are violations of the Student Code of Conduct at Bellevue College.”

“Examples of unacceptable behavior include, but are not limited to: talking out of turn, arriving late or leaving early without a valid reason, allowing cell phones/pagers to ring, and inappropriate behavior toward the instructor or classmates. The instructor can refer any violation of the Student Code of Conduct to the Vice President of Student appeal procedures are listed in the Student Code of Conduct, available in the office of the Vice President of Student Services.”

The Student Code, Policy 2050, in its entirety is located at:

http://bellevuecollege.edu/policies/2/2050_Student_Code.asp

Bellevue College E-mail and access to MyBC

All students registered for classes at Bellevue College are entitled to a network and e-mail account. Your student network account can be used to access your student e-mail, log in to computers in labs and classrooms, connect to the BC wireless network and log in to MyBC. To create your account, go to:

<http://depts.bellevuecollege.edu/helpdesk/kb/set-your-bc-email/>

BC offers a wide variety of computer and learning labs to enhance learning and student success. Find current campus locations for all student labs by visiting the Computing Services website at:

<http://depts.bellevuecollege.edu/helpdesk/students/computerlabs/>

Disability Resource Center (DRC)

The Disability Resource Center serves students with a wide array of learning challenges and disabilities. If you are a student who has a disability or learning challenge for which you have documentation or have seen someone for treatment and if you feel you may need accommodations in order to be successful in college, please contact us as soon as possible.

The DRC office is located in B 132 or you can call our reception desk at 425.564.2498. Deaf students can reach us by video phone at 425-440-2025 or by TTY at 425-564-4110.

Please visit our website for application information into our program and other helpful links at www.bellevuecollege.edu/drc

Public Safety

Public Safety is located in the K building and can be reached at 425-564-2400 (easy to remember because it's the only office on campus open 24 hours a day—2400). Among other things, Public Safety serves as our Parking Permits, Lost and Found, and Emergency Notification center. Please ensure you are signed up to receive alerts through our campus alerting system by registering at <http://www.bellevuecollege.edu/alerts/?ref=footer>

If you work late and are uneasy about going to your car, Public Safety will escort you to your vehicle. To coordinate this, please phone ahead and let Public Safety know when and where you will need an escort.

Please familiarize yourself with the emergency postings by the door of every classroom and know where to go in the event of an evacuation. Your instructor will be asked if anyone might still be in the building, so check in before you do anything else. Emergency responders will search for anyone unaccounted for.

If a major emergency occurs, please follow these two rules:

- 1) Take directions from those in charge of the response - We all need to be working together.
- 2) Do not get in your car and leave campus (unless directed to) - Doing so will clog streets and prevent emergency vehicles from entering the scene. Instead, follow directions from those in charge.

Please do not hesitate to call Public Safety if you feel safety questions or concerns at any time.

Grading:

Grading will be strictly by percentage. Grades will be calculated according to the following schedule:

Percentage	Grade	Percentage	Grade
96 – 100	A	76 – 79	C+
92 – 95	A-	72 – 75	C
88 – 91	B+	70 – 71	C-
84 – 87	B	66 – 69	D+
80 – 83	B-	60 – 65	D
		Below 59	F

TENTATIVE SCHEDULE – Subject to change

Date	Session Nu	Topic / Activity / Special Notes
1/3/2017	1.theory	PLPC-120048. Course Overview. Basic messaging modeling and terminology.
1/3/2017	1.lab	PLPC-120048. Virtualization basics review. Installing the VM Image. Emacs tutorial.
1/5/2017	2.theory	PLPC-120049. Messaging Medium – Ramifications On Autonomy, Privacy and Society.
1/5/2017	2.lab	PLPC-120049. Introduction To Emacs and Blee. Overview of Emacs major-modes and minor-modes.
1/10/2017	3.theory	PLPC-120049. History of email. Evolution of email protocols.
1/10/2017	3.lab	PLPC-120049. Access to the RFCs list and identification of current RFCs.
1/12/2017	4.theory	PLPC-120050. Overview Of The Reference Implementation And Software Platform.
1/12/2017	4.lab	PLPC-120050. Overview of org-mode.
1/17/2017	5.theory	PLPC-120051. ByStar Messaging Platform Foundations
1/17/2017	5.lab	PLPC-120051. Basic bash scripting using emacs sh-mode and shell-mode. Introduction to Bash-IIMs.
1/19/2017	6.theory	PLPC-120051. Abstraction of accounts in Unix and their use as ByStar service and information objects as a base for email accounts.
1/19/2017	6.lab	PLPC-120051. Read and parse a set of names and addresses as input to a mail traffic generator.
1/24/2017	7.theory	PLPC-120052. Overview of daemontools and tinydns.
1/24/2017	7.lab	PLPC-120052. Use Of Blee Panels for managing IIMs. Monitoring and managing daemontools and tinydns.
1/26/2017	8.theory	PLPC-120053. qmail and mailfront installation and operation.
1/26/2017	8.lab	PLPC-120053. Use of org-mode to organize and structure Email related RFCs.
1/31/2017	9.theory	PLPC-120054. Full messaging platform installation and operation.
1/31/2017	9.lab	PLPC-120054. Emacs as a Bash IDE. Bash scripting of a MailInjector. Design and implementation overview.

2/2/2017	10.theory	PLPC-120055. Sending: Message Submission (client/server) – Message Injection). Linux logging system. qmail-DE logging system
2/2/2017	10.lab	PLPC-120056. Use of ByStar Panels to monitor, logs, queues and processes.
2/7/2017	11.theory	PLPC-120056. Message processing. MIME and history of MIME.
2/7/2017	11.lab	PLPC-120056. Dissecting email messages into their MIME body parts.
2/9/2017	No Class	No Class
2/14/2017	12.theory	PLPC-120056. Accessing the message store.
2/14/2017	12.lab	PLPC-120056. Accessing your private ByName accounts through ssmtp and simap.
2/16/2017	13.theory	PLPC-120057. Mail User Agents
2/16/2017	13.lab	PLPC-120057. Configure 3 Linux mail user agents to access your ByName mail account.
2/21/2017	14.theory	PLPC-120058. Spam Detection and Virus Inspection (on Delivery and on Submit)
2/21/2017	14.lab	PLPC-120058. Retrieve and desпам the instructor provided mailbox.
2/23/2017	15.theory	PLPC-120058. DomainKeys Identified Mail (DKIM) and SPF for outgoing email. Authenticate DKIM and SPF for incoming email.
2/23/2017	15.lab	PLPC-120058. Optionally add DKIM signatures to outgoing qmail. Authenticate DKIM signatures on incoming mailfront.
2/28/2017	16.theory	PLPC-120058. Resident Mail-Store User Agents And Resident MTA Sender
2/28/2017	16.lab	PLPC-120058. Use notmuch to search through email and link notmuch to the Gnus MUA.
3/2/2017	17.theory	PLPC-120058. Mailing Lists and Mail Responders.
3/2/2017	17.lab	PLPC-120058. Ezmlm experimentation.
3/2/2017	17.theory	PLPC-120058. Mail system management software and tools.
3/2/2017	17.lab	PLPC-120058. Familiarize yourself with messaging system Blee Panels.
3/7/2017	No Class	No Class
3/9/2017	18.theory	PLPC-120058. Mail scalability and reliability.
3/9/2017	18.lab	PLPC-120058. Complete the mail retriever script.
3/14/2017	19.theory	PLPC-120060. Mail As A Services – In Public And Private Clouds
3/14/2017	19.lab	PLPC-120060. Experiment with Exchange. Exchange in the cloud and Google cloud email services.
3/16/2017	20.theory	PLPC-120061. Mail System Transitions – Lift and Shift.
3/16/2017	20.lab	PLPC-120061. Outline of assignment for creating an action plan for mail system transitions.
3/21/2017	21.theory	PLPC-120059. Lessons Learned – Course Review.
