

Volume

1

UNIVERSITY OF KANSAS

EECS Technical Staff

Draft Copy

Operations Guide

EECS TECHNICAL SUPPORT GROUP

Operations Guide

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OVERVIEW

MISSION

The EECS Technical Staff (ETS) exists to provide strategy, direction and support for the students and faculty of the EECS department.

OBJECTIVES

The Tech Staff will define and administer policies and procedures designed to provide a stable, secure and flexible operating environment for the activities of the department.

The Tech Staff will design and implement infrastructure solutions to support the ever changing needs of the department.

The Tech Staff will collaborate with EECS faculty and other university entities to optimize resource utilization and improve services whenever possible.

The Tech Staff will provide facilities, equipment and expertise to students and faculty as needed for the completion of department sanctioned projects and activities.

The Tech Staff will manage inventories and technology upgrades in order to maximize productivity and control costs.

INFORMATION SECURITY

Personal computers, e-mail, the Internet, and the need for high-speed, reliable network capability are a daily part of life for members of the university community. Unfortunately, security breaches at highly visible computing sites have become commonplace today, and universities are favorite targets for attacks due to the significant computing resources available on university campuses.

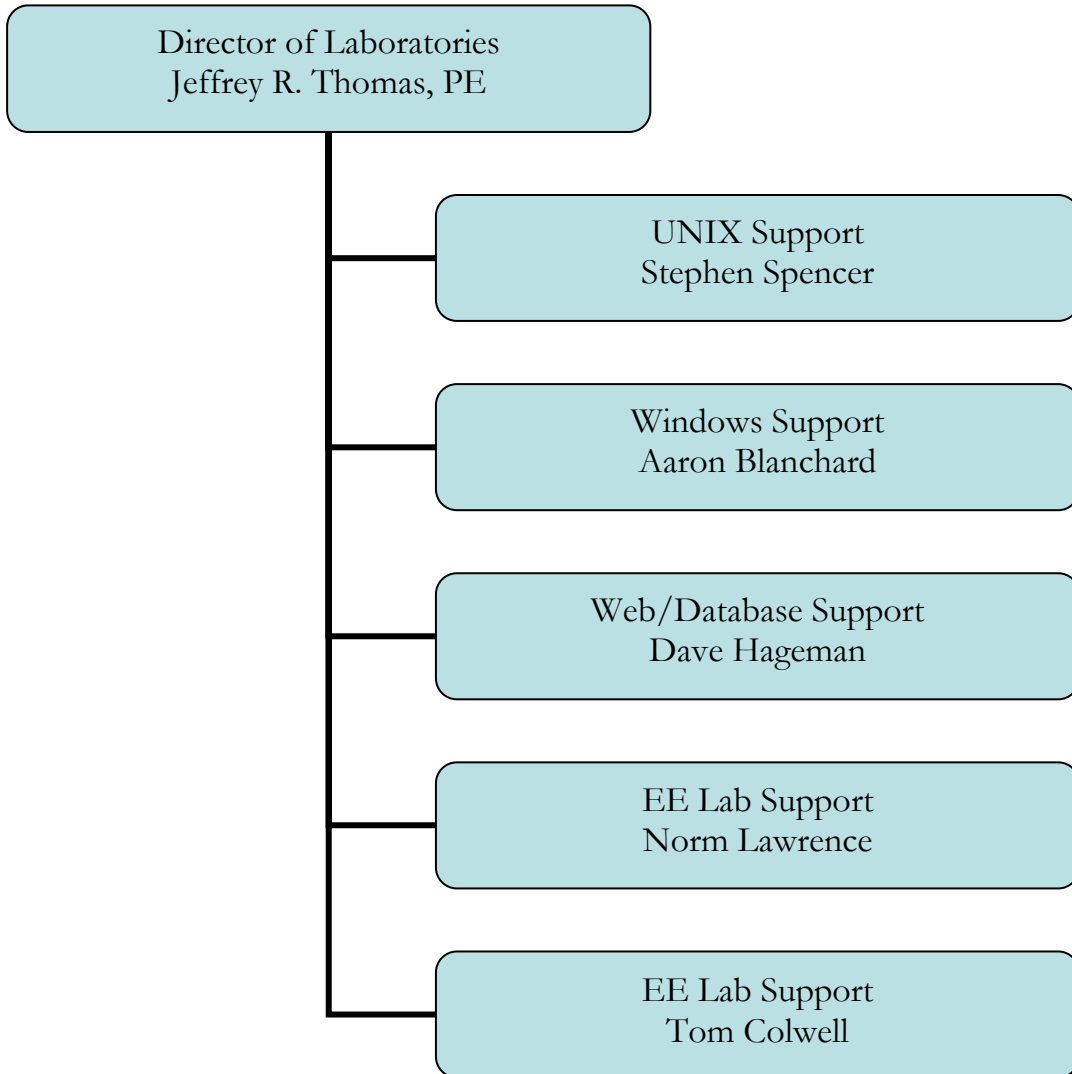
As a result, critical university computing resources are at risk. Like many university campuses, KU is experiencing an increase in unauthorized attempts to access its network and computer systems. Attempts to break into campus computers are not an extraordinary event.

While it is not possible to anticipate and intercept all attacks, there are specific steps that can be taken to significantly reduce vulnerability. Remember that security is often the inverse of convenience. Systems in laboratories and common areas will be configured for security first and convenience second.

For more information on information security please see <http://www.security.ku.edu/hardening> and <http://www.ku.edu/acs/virus/>

ORGANIZATION

The EECS technical staff (ETS) is organized as follows:



INFRASTRUCTURE COMPONENTS

LAN/WAN

CABLE PLANT

The EECS technical staff (ETS) will be responsible for specifying the cable plant to be used for any new, updated or replaced cabling for EECS. ETS will also be responsible for coordinating the installation of the cabling with NTS or other cabling contractors. ETS will maintain the skills and equipment to do testing and termination of copper cabling to the most current specifications in use at the time (Cat5E/6). ETS will maintain the skills and equipment to test fiber optic cables of both single mode and multimode types.

SWITCHES/ROUTERS/VLAN

ETS will specify, purchase, configure, install and maintain all switches and routers necessary to implement the IP network desired by the EECS department. ETS may implement VLAN technology as needed to accomplish the goals of the network design. ETS will maintain the skills necessary to support the various equipment types in use. Currently ETS is engaged with Cisco as a network equipment provider.

FIREWALLS & RULES

ETS will specify, purchase, configure, install and maintain all necessary hardware and software to provide the firewalls and rules desired by the department. ETS will assist with and or define the

necessary firewalls and rules to secure the functionality and intellectual property of the EECS department and the University of Kansas. ETS will further maintain and update these rules as exploits are defined and weaknesses discovered. ETS will coordinate with any organization that does business with EECS to ensure seamless access where warranted.

WIRELESS ACCESS POINTS

ETS will provide wireless access via wireless access points (WAP) distributed within and around the buildings occupied by EECS. The wireless access will be secured and monitored to prevent unauthorized access. Where overlap may exist, wireless coverage will be coordinated with other departments to prevent undesirable behavior.

Services

DOMAIN NAMING SERVICE (DNS)

ETS will maintain the domain 'eecs.ku.edu'. ETS will provide a primary and secondary name server that will allow clients to resolve names within the domain. ETS will maintain the zone, forwarding and reverse lookup files so that all clients within the domain may access other entities outside of the domain. ETS will provide and maintain the configurations necessary for the clients, both windows and UNIX, to access these DNS servers. Existing legacy domains will be maintained for as long as their parent domains exist or maintenance of these domains becomes impractical. Domains that fall into this category are cs.ukans.edu and eeecs.ukans.edu.

WINDOWS INFORMATION NAMING SERVICE (WINS)

ETS currently maintains a WINS server to provide full functionality for legacy windows machines. WINS is being phased out of EECS.

DYNAMIC HOST CONFIGURATION PROTOCOL (DHCP)

ETS will provide DHCP services for all machines in the EECS network. ETS will provide a DHCP server that will assign IP addresses as necessary to allow connectivity for authorized clients on the EECS network. ETS will provide a mechanism whereby visiting personnel can connect to the EECS network and have access to a limited number of services.

TIME SERVICE (NTPD)

ECS maintains a time server that is synchronized to the time servers hosted by IITC. UNIX clients will and windows clients may use ntp.eecs.ku.edu as a time reference.

WEB SERVICES (WWW)

ETS currently maintains 3 web servers. The external web server contains the informational web pages for the EECS department and shop. The internal web server contains the MYEECS system and its associated databases. Finally, the people web server hosts the individual pages and applications (CGI) generated by individuals within the department.

PHP is currently NOT supported due to the large number of security holes and exploits associated with PHP. Java Servlets are currently NOT supported due to the high support cost of maintaining an environment conducive to learning while maintaining security for the remainder of the department.

Individuals seeking web space should contact ETS via the ticket system. Organizations seeking web space should contact the director at jrthomas@ku.edu

ELECTRONIC MAIL (E-MAIL)

ETS maintains an independent mail server that is available to all EECS faculty, staff and students. The mail server sends to and receives from the university mail system. The mail server supports both POP and IMAP clients. Faculty, Staff and students do not have any size restrictions on their mailboxes.

The EECS mail server uses Spam Assassin to provide spam filtering. While it's not foolproof it does capture several thousand spam e-mails per day.

ETS also supports a mailing list server. Server side lists can be created and managed as either open or closed with logs and digests as required.

ETS also provides desk side support for e-mail clients that use the ACS sponsored Exchange mail system.

E-Mail Usage Policy (Abridged)

To view the complete policy, go to: <http://www.ku.edu/~vcinfo/netguide.html>

The University supports a climate of trust and respect and does not ordinarily read, monitor, or screen electronic mail. *However, complete confidentiality or privacy of email cannot be guaranteed.* Confidentiality cannot be guaranteed because of the nature of the medium, the need for authorized staff to maintain email systems, and the University's accountability as a public institution. The Provost or his designee may authorize access to employee or student email in a number of circumstances including, but not limited to, situations involving the health or safety of people or property; possible violations of University and Board of Regents codes of conduct, regulations, or policies; possible violations of state or federal laws; subpoenas and court orders;

other legal responsibilities or obligations of the University; or the need to locate information required for University business.

The University routinely uses email for both formal and informal communication with faculty, staff and students. Faculty, staff, and students are required to register an email account or utilize a University-provided account during their enrollment or employment at the University. These addresses are used for University business and official University communications. All faculty and students, and all staff who have access to email, are expected to check their email regularly for University communications. Official University communications include, but are not limited to, enrollment information, grade reports, financial statements and other financial information, library overdue notices, and policy announcements.

KU email accounts remain the property of the State of Kansas. The University routinely disables accounts 90 days after graduation or other severance from the University.

Email use that violates the rights of others, law, or University policy or regulation, is a serious abuse. Such actions may subject an individual to termination of account privileges and/or appropriate disciplinary and/or legal action. Appeals of account suspensions should be made to the EECS Director of Laboratories, the Vice Provost for Information Services or through other appropriate University channels.

[1]"Email" refers to the direct or remote use of, or access to, KU's central or peripheral computer hardware, software, networks, or other related systems or support services, to generate, transmit, store, or otherwise manipulate electronic mail, electronic mail attachments, or other such messages by computer. Use of electronic bulletin boards, electronic mail lists ("list servers"); account passwords, logon IDs, messenger services, headers, and "signatures" are included in this definition.

The EECS Departments policies for account suspension will be added here at a later date.

REMOTE ACCESS

Intra-Campus

Secure Shell (SSH)

Secure FTP (SFTP)

Off Campus

Secure Shell (SSH)

Secure FTP (SFTP)

AUTHENTICATION

Student Accounts

New user accounts will be available at the beginning of the semester. Accounts are generated automatically from university enrollment data. There may be delays for students who go through late enrollment.

Student user id's are based on the first initial-last name and then truncated to 8 characters. ID's will not be changed unless the resulting string is deemed inappropriate by the director.

Students may obtain their account information from the EECS help desk in Eaton Commons. It is the students' responsibility to make sure that his/her account is available and operational in order to have access to software and web services required for completion of EECS course work.

Students who violate EECS or University computing policies run the risk of having their account(s) suspended without warning. Students are responsible for reviewing and understanding these policies. Questions should be addressed to EECS staff or administration.

Accounts will remain active for two terms after graduation or leaving the department/university. After one term, the contents of such accounts will be archived on CDROM and will be available at the request of former students. Specific requests for expiring accounts will be handled on an individual basis.

Passwords

A random password will be generated for each new account. Students are encouraged to change their password immediately. Passwords will be periodically checked for security. In cases where the password is found to be insecure students will be notified and asked to change their password. If no action has been taken within 3 days, the account will be locked. Students must visit the EECS help desk in Eaton commons to reactivate their account.

Passwords must be at least 8 characters in length. Complete words (regardless of language) should be avoided as well as symbolic representation of common characters (ex: 3 -> E, 0 -> O, 1 -> l|L|i|I) the inclusion of (!@#%&*()_+ -=[]{};'/.,<>?/) symbols and numbers are encouraged. There is no such thing as a security breach that only affects one person or a password that is too obscure.

Password information or requests to have a password changed must be made in person at the EECS Help Desk. Students will need to provide a valid KUID.

Password information will not be made available via telephone or electronic mail. Students at remote campuses will need to contact their professor about obtaining EECS computing accounts.

Lightweight Directory Access Protocol (LDAP) Services are not provided general use. ETS does maintain and use an LDAP server to manage users accounts.

A P P L I C A T I O N L I C E N S E S E R V E R S

ETS maintains and supports several instances of license servers. These license servers currently support licenses for Matlab, Orcad and other software packages.

Node Locked or individually licensed packages are maintained as well and are detailed in the application software section of this document.

P R I N T I N G

ETS maintains a central print server based on the Common UNIX Printing Service, CUPS, that provides access to all of the department's printers from UNIX, Windows, and MAC clients. ETS currently maintains 17 networked printers in the laboratories and common areas. The description and location of these printers can be found at <http://cups.eecs.ku.edu:631/printers>. More information about the CUPS system can be found at <http://www.cups.org>.

Currently the EECS Department does not charge students for printing. This policy is under review and may be changed in the near future.

Accounting for printer utilization is currently in the collection mode and the data will be reviewed at the end of the 2003/2004 winter term. EECS Printer utilization can be viewed at <http://help.eecs.ku.edu/~dba/pr-metrics>

Usage

Printers should be used for course related work only. Excessive use of printing resources will result in increased fees passed on to the students.

S T O R A G E

User Disk Space Allocations and Quotas

All EECS data storage facilities are for the expressed purpose of supporting the teaching, learning, research, and service mission of the University. Unacceptable types of data including but not limited to non-academic related multimedia files, backups of personal workstations, and unlicensed software will be removed without notice. Multiple abuses of the storage subsystems will result in account suspension.

Students will be subject to disk quotas as follows:

- All students: 150 megabytes

Students may request a temporary increase in their disk quotas. Each request will be addressed individually and at the discretion of the EECS technical support organization.

Classroom Space (Homework, Notices, WWW, etc.) - TBD

Administrative Space - TBD

High Availability Space - TBD

User Installed Software

Installation of unlicensed software is not permitted. Installation of software into user home directories must be cleared with EECS staff. EECS Tech support reserves the right to remove unacceptable software from students' home directories without notice. Suggestions for expanding the scope of the EECS software suite can be made via the EECS help desk in Eaton Commons.

Backup and Recovery/Disaster Recovery

ETS currently provides regular data backup services for the departmental file server and selected staff workstations. This process is under review and may be modified pending the receipt of new equipment. The disaster recovery plan is also under review and will published at a later date.

DATABASE SERVICES

An Oracle instance is maintained for those students taking EECS647. Other students may access this instance if the work is approved by their professor. Oracle is currently not used in any production capacity by the EECS Department.

PostgreSQL is currently the database solution of choice by ETS. There is significant expertise in this area. We do not currently host a generic PSQL instance for use by the general public but are willing to help start instances as needed for custom solutions.

ETS is currently engaged with the PeopleSoft initiative to obtain accurate and timely enrollment data from the registrars' office. ETS also maintains ties with the ARTS database for additional student data as well.

FACILITIES

HEATING, VENTILATION AND AIR CONDITIONING (HVAC)

General environmental controls are managed by the university's facilities operations (F&O) group. ETS will coordinate and collaborate with F&O on issues relating to out of bounds conditions for the buildings and classrooms associated with the EECS Department.

POWER DISTRIBUTION AND MAINTENANCE

Power distribution is also managed by KU facilities and Operations, F&O. ETS will take responsibility for specifying and monitoring new and existing power distribution facilities. ETS will coordinate with F&O for outages, expansions and recoveries. EECS personnel can report power problems to ETS via the ticket system and ETS will contact the correct F&O personnel.

DISASTER EVACUATION MANAGEMENT

ETS will assist with the evacuation of Eaton Hall, floors 1, 2 and 3, during an evacuation alarm condition. ETS will support the SOE Dean's evacuation policies and procedures.

It is the dean's policy that ALL personnel leave the building if an alarm sounds. Students refusing to leave will be escorted out by the campus police department and may face disciplinary actions.

ROOM ACCESS AND DOOR CODES

The software labs in the commons are open 7x24x365. The service course labs, 1014 & 1018 are open based on the schedule defined by the course coordinator. The hardware labs on floors 2 and 3 are closed except during assigned lab hours.

Faculty should have a door code that is good for all doors with an electronic lock. TA's will be given codes to their specific lab. If a professor wishes students to have a door code to a particular

lab it will be granted. The professor needs to submit a ticket with the students name and ku id, the lab they are to have access to and any time restrictions.

Student door codes are cleared at the end of the semester except for the 501/502 and 541/542 students.

Door codes are generated every Wednesday at noon.

LOGISTICS

SPECIFICATION AND PURCHASING

All purchases of equipment and supplies must be submitted to the director for consideration. Purchases up to \$500.00 can be made with the directors' approval. \$500 - \$ 2500 purchases must be approved by the chair of the equipment committee. Purchase above \$2500, or any purchase the chair so desires, must be approved by the equipment committee.

INVENTORY CONTROL

ETS will maintain and manage all EECS Department computers and equipment per the guidelines outlined in the State of Kansas Business Guide.

ACCOUNTING

Accounting and ordering will be handled with the EECS fiscal organization, cindy@eecs.ku.edu

INTERDEPARTMENTAL COLLABORATION

The director of ETS has been identified as a technical liaison for NTS. As such ETS will support and foster a relationship with NTS and other computing departments in an effort to improve the levels of service for the EECS Department.

TRAINING

All ETS Staff are encouraged to pursue additional training each calendar year. The type and location of training will be subject to current financial health of the department.

CUSTOMER RELATIONS

PROBLEM RESOLUTION

There are two choices on the web page for problem submission. The instructor request allows a severity level to be assigned to the ticket. The theory here is that instructors are savvy enough to help ETS prioritize the problems. All others do not have the ability to prioritize and will be assigned a neutral (non-critical) priority.

ETS requests that customers reporting problems classify the severity of the problem in one of four categories. 1) All Stop. 2) Critical. 3) Non-Critical and 4) Wish List. The definitions of these categories are as follows:

All Stop – This problem affects the operations of the entire department or a laboratory. There is no workaround. This category should be used very rarely. Problems in this category should receive a call back within 30 minutes and a resolution within 2 hours. Examples of this type of problem would be ‘server down’, ‘no power in the lab’, etc.

Critical – This problem affects the operations of several people or a laboratory. There is a workaround. Problems in this category should receive a call back within 60 minutes and a resolution within 4 hours. Examples of this type would be ‘2060 lab firewall down’, ‘all machines in 2010 are denying access.’, etc.

Non-Critical – This type of problem affects a single user and has a workaround. Problems in this category should receive a call back within 4 hours and a resolution within 2 working days. Examples of this type would be ‘cannot print to network printer’, ‘need s/w package installed’, etc.

Wish List – This type of problem is typically a request for added functionality. Problems in this category should receive a call back within 1 working day and the resolution time will be negotiated.

The *majority* of the problems received by the ETS *should* be classified as either critical or non-critical. If at any time ETS is going to miss the time to resolve, ETS should contact the customer and discuss the situation. Any ticket that comes in as **All Stop** will be challenged by ETS to determine the validity of the classification. Response time for all but ‘All Stop’ will be measured in terms of normal working hours.

TICKET TRACKING SYSTEM

ETS currently has no good way for customers to view the tickets currently being worked. Once a ticket is assigned to a technician the technician should contact the customer and establish a dialog. Customers can view their tickets at <http://www.eecs.ku.edu/help/request/status>.

The ticket tracking system will provide statistics to be used to monitor and improve the support processes. Ticket metrics can be viewed at <http://help.eecs.ku.edu/~dba/rt-metrics>. These graphs are updated daily.

PROBLEM ESCALATION

Customers who are not satisfied with the response they are receiving from ETS should use the following escalation procedure:

For a non-responsive condition (no one has contacted the customer in X hours):

Contact the Director of Laboratories, Jeff Thomas, in 3048 Eaton at 864-8806 or 840-4666 or jrthomas@ku.edu and provide the ticket number if known, and the pending issue.

If satisfaction is still not received contact the EECS Chair, Costas Tsatsoulis, at tsatsoul@eecs.ku.edu or 864-4486 or 550-2286.

For an unsatisfactory response (didn't like the answer, bad manners, etc.):

Contact the staff member directly (outside the ticket system) for clarification and/or further discussion.

If satisfaction is still not received, jump to the procedure for non-responsive conditions.

SERVICE HOURS

ETS has full time staff on site Monday through Friday from 8:00 a.m. through 5:00 p.m. The ETS help desk in the Eaton Commons will be staffed according the schedule listed below. The level of support after hours from the help desk will be limited in scope and targeted at the most common problems experienced by students.

After hours support will be provided for 'All Stop' issues only. The process for obtaining after hours support is as follows:

- 1) Create an 'All Stop' ticket.
- 2) You need to be onsite. 'I Cannot Dial In' is NOT an 'All Stop' issue.
- 3) You need to be a full time paid staff or better. GTA and Student requests for after hours support will be limited to what the help desk can provide.
- 4) Go to the help desk in the commons and discuss the issue with them. They may already know about it and resolution may be underway. If not, the help desk will initiate the after hours support contact.
- 5) Be prepared to give a detailed description of the problem, the ticket number, and some justification as to why this is an 'All Stop' issue.
- 6) Be prepared to remain onsite until ETS arrives.

STUDENT HELP DESK

ETS will maintain two help desk operations as follows. The main EECS help desk will be located in the Eaton Commons. This desk will be staffed with a student worker according to the following schedule:

Monday – Thursday	0800 – Midnight
Friday	0800 – 1700
Saturday, Sunday	Noon – 1700

This desk should be the students' first point of contact for computer related problems outside the laboratories. In the labs the first point of contact should be the GTA. Both the help desk and the GTA may recommend that the student open a trouble ticket with ETS.

The secondary help desk will be dedicated to the Service Courses and will be located in 1012 Eaton. This desk will have restricted hours of operation tailored to the needs of the Service Courses. The abilities of this desk will be limited as well. This help desk may also recommend opening a ticket to ETS.

SERVICE METRICS

The metrics currently collected are available for review at <http://help.eecs.ku.edu/~dba/rt-metrics>. These graphs are updated daily.

SERVICE LEVEL AGREEMENTS

<There are currently no service level agreements in place..>

COMMUNICATIONS

ETS should provide the faculty and staff with general updates on a regular basis. Updates should include the major issues at the time as well as any upcoming changes or events in the immediate future.

ETS will notify the customer base in the event of any issues that may affect them. Notifications must be sent regarding things like network outages in or out of our control, virus alerts, power disruptions and other similar events. ETS communications to individual customers about specific issues should be handled as described in the problem resolution section.

ETS will use the following process for notifications about **scheduled** downtime and system upgrades.

- T minus 14 Days – Issue a Request for Comment (RFC) on the proposed change.
- T minus 7 Days – Issue a summary of the responses and any adjustments to be made.
- T Minus 1 Day – Issue a reminder.
- T minus 1 Hour – Issue a reminder.
- T -- Implement.
- T plus 1 Hour – Issue a status update with results and repercussions.

ETS will notify the faculty and staff immediately in the event of an **unscheduled** downtime. The communication will include a problem statement and an estimated time to repair. If the failure precludes the use of the e-mail system ETS will give the EECS main office verbal or written notice so that they may act as the distribution point. Once the problem is resolved ETS will communicate to the faculty and staff and detail what the problem was and what needs to be done by the faculty, if anything, to return to normal operating mode.

APPLICATIONS

SUPPORTED OPERATING SYSTEMS

UNIX

Red Hat Linux

FreeBSD

Gentoo

Windows

Windows NT

Windows 2000/2003

Windows XP

Windows Legacy (Limited)

Other

MAC OS X (Limited)

SOFTWARE PACKAGES AND INSTALLATION

Windows platforms:

Microsoft Office (Word, Excel, PowerPoint,
Access, Outlook)

Microsoft Visio

CodeWarrior 8

Adobe Acrobat 5

Hummingbird Exceed (X terminal Software)

Internet Explorer

Extend Simulation Software

Real Software

EEsof (Agilent Advanced Design System)

Dr. Scheme

Sun Java JDK

CLIPS, JESS

SSH Secure Shell

NTPort (parallel port access software)

Cadence (OrCAD Capture, Layout, PSpice)

Network Associates VirusScan

Netscape

Matlab

Unix platforms:

C

xSQL (Basic Linux/Free BSD Load)

C++

Mozilla

Java

Clips

Perl

JESS

Matlab

Haskell

Python

Course Specific:

Scheme

Nachos

Extend

CygWIN

Haskell

VMWare

VHDL

Oracle.

S O F T W A R E T E S T I N G

ETS will provide a test bed for software testing. This test bed will consist of X and be located at Y.

<Define X and Y>

APPLICATION SUPPORT

Support for applications will be ad hoc at best. The volume and diversity of the software applications in use by the EECS department makes detailed support impractical at this time.

WORKSTATIONS

Acceptable Use of University Resources

Access: The University maintains access to local, national, and international sources of information and communication mechanisms for the expressed purpose of supporting the teaching, research, and service mission of the University. Information resources will be used by members of the community with respect for the public trust through which they have been provided and in accordance with the law and policies established by the State of Kansas, the Board of Regents, and the University and its operating units.

Freedom of Expression: Freedom of expression and an open environment to pursue scholarly inquiry and for sharing of information are encouraged, supported and protected at the University of Kansas. Censorship is not compatible with the goals of the University. The University will not limit access to any information based on its content, which meets the standard of legality.

Privacy: The general right of privacy is extended to the extent possible to the electronic environment. The University and all electronic users should treat electronically stored information in an individual's files as confidential and private. Content should be examined or disclosed only when authorized by the owner, approved by an appropriate university official, or required by law.

Intellectual Property: The University supports the production of intellectual property by faculty, staff and students for the benefit of the institution and society. All users of electronic information have a personal responsibility to recognize and honor the intellectual property of others.

Security: Academic and administrative information processing, telecommunications, and related technology are critical academic and business tools of the University of Kansas. Inappropriate exposures of confidential and/or sensitive information, loss of data, inappropriate use of computer networks, and risks of physical damage can be minimized by compliance with reasonable standards, attention to the proper design and control of information systems, and sanctions for violation of security policy. The full version of the KU IT security policy can be found at <http://www.security.ku.edu/docs/>

Effective Use of Resources: The University provides information technology resources to the campus community for everyone's use. These assets should be used equitably and responsibly. The University expects all users to be effective network citizens. The University attempts to maintain high performance of these resources for the benefit of all. Individual users or processes may be identified as using an inordinate amount of resource. Priority is always given to activities

that support the University's mission of instruction, research, and service. Non-academic student use will receive a lower priority.

Personally owned assets: EECS does not support the connection of personally owned hardware into either the EECS or NTS communications network. Individuals discovered disconnecting EECS hardware and/or connecting personally owned assets to the network are subject to account suspension and loss of privileges.

SPECIFY, RECOMMEND, PURCHASE AND INSTALL

ETS will investigate, specify and recommend workstation hardware that is commensurate with the latest technology and the EECS budget at the time. ETS will provide guidance to any faculty member making individual purchases. ETS will work with the EECS equipment committee to make sure that there is a coordinated plan for upgrading faculty, staff and laboratory computers.

<Insert Plan Here>

H A R D W A R E B R E A K - F I X

ETS will maintain a small inventory of spare parts and equipment. The depth of this inventory will be determined by the recent fiscal health of the department. Hardware that is found to be in need of repair will be field replaced and take back to the shop for disposition. Units will then be repaired in house or returned to the manufacturers authorized repair facility.

Standardization of hardware, especially PC's, by the department would have a significant positive impact on this process.

HARDWARE LABORATORY SUPPORT

EE LAB EQUIPMENT

The director of laboratories will actively participate in the EECS equipment committee. The director will investigate and recommend equipment for both the hardware and software laboratories. ETS will provide installation, setup, training and repair services for all hardware and software lab equipment. Faculty inputs will be solicited prior to recommendation and the EECS equipment committee will give final approval.

EE LAB PARTS & SUPPLIES

ETS will maintain an inventory of consumable parts and supplies for normally used by all of the EECS hardware labs. These parts and supplies will be available for checkout by GTA's, students, and faculty to support lab projects.

SHOP POLICIES

General

At the beginning of each semester, the equipment checkout database will be purged. New equipment accounts will be generated automatically from university enrollment data. For students who enroll late, accounts can be created at the service area of the EECS Shop. Required information for account creation will include proof of enrollment, a valid KU ID card, e-mail address and phone number. It is advisable to verify the existence of the account prior to the first day of lab. Note this account is separate from EECS user accounts.

Students are allowed to check out equipment under their personal account only. The account owner is responsible for any equipment checked out under their account.

It is the individual's responsibility to verify that the items checked out are complete before leaving the Shop service area (i.e. probe kit contents). The contents will be checked for completeness upon return. If any items are missing upon return, the account will be locked until the items have been replaced and/or the balance for the items is paid. This action will be handled through the EECS fiscal organization, cindy@eeecs.ku.edu. If the missing items are not replaced or paid for within 5 business days, the TA and professor of the class will be notified.

Equipment will be checked out in a neat, organized fashion, and should be returned in the same manner. Each student has the right to refuse a disorganized probe kit, as does the EECS Shop. Lost or damaged equipment must be reported immediately. Normal wear and tear of hand tools and equipment is expected. Willful neglect or abuse will not be tolerated.

No food or drink is allowed in any of the EECS labs.

Checkout Policy

Equipment is due back to the shop by 0900 the day after it is checked out.

Tools such as multi-meters, probe kits, and other hand tools can be checked out at any time during normal office hours. All checked equipment should be returned as soon as the lab period is over if not still in use.

Senior Design Class students working outside the scheduled lab hours are allowed to check out equipment if actively working in the lab. If you are not actively using the items (i.e. carrying tools to a lecture), please return the equipment to the EECS Shop.

Tools and equipment are a shared resource and, at times, used by several different labs concurrently. Scheduled labs have priority on equipment checkout.

The tool checkout program will keep track of any late returns and will assign an infraction to the account. Three consecutive infractions are allowed and the account will be locked on the fourth infraction accrued. The lockout will be cleared only with the authorization of the class professor.

Note: The Shop is flexible concerning overnight checkout and will accommodate any student with special circumstances (i.e. job schedules). These cases must be scheduled prior to your equipment being overdue or an infraction will be accrued.

Fixed Equipment Care and Usage

Proper care and operation of the fixed lab equipment is the responsibility of each student. If unfamiliar with the operation of the test equipment, seek the support of the GTA or shop personnel. Report any equipment failures immediately to the GTA in charge of the class. If a hard failure is verified, report it immediately using Help Request at: <http://www.eecs.ku.edu/help/request/>

Facilities Care and Use

The EECS shop is to be available for all EECS students. Any EECS student using the shop areas is expected to clean up after themselves. Any student failing to do so will be reported to their faculty advisor, the department chair and is subject to a future denial of service.

Ordering Parts

Parts orders are to be submitted electronically via the EECS Shop webpage or at: shop_order@eeecs.ku.edu

- All GTA's (other than senior design classes) are required to have parts orders submitted 5 business days prior to pickup. GTA's should also make a reasonable effort to project the needs of the course for the entire semester and convey those needs to the EECS Shop staff.

Definitions:

Complete Bill of Materials: (Typically for second semester Senior Design and specialty orders not in stock) A complete BOM will be composed of Class number, project description, vendor, vendor phone numbers, part numbers, part description, quantity, quantity price, minimum quantity requirements, lead time of delivery(date), shipping costs, total cost, requester name, email, and phone number.

Modified Bill of Materials: (Typically for first semester Senior Design) A Modified BOM will compose of Class number, project description, part numbers, part description, quantity, requester name, email and phone number.

- Senior Design students (EECS 501,502,541,542) will have their MBOM orders typically filled within one hour of receipt for stocked items.
- Where a CBOM is required, the order must be approved by the class professor.
- It is the responsibly of the Senior Design student to determine "lead time of delivery" for out of stock or specialty items(CBOM orders).

