

Benchmarks

A green
light to
greatness.

UNT

ABOUT BENCHMARK ONLINE SEARCH ARCHIVE SUBSCRIBE TO BENCHMARKS ONLINE

Columns, April 2013

Network Connection

Link of the Month

Helpdesk FYI

RSS Matters

Training

Staff Activities

[Home](#) » [Issues](#)

Benchmarks - April, 2013

Campus Computing News



Dropbox.com installation now supported for limited use

By [Dr. Philip Baczewski](#), Senior Director of Academic Computing and User Services and Deputy Chief Information Officer for University Information Technology

Over the past several months, there has been much discussion around the use of Dropbox.com and other similar cloud services for various types of external collaboration in support of research and scholarship at UNT. Specifically, the requirement to accept an End User License Agreement (EULA) from Dropbox.com prevented IT support staff from installing the Dropbox.com client on University-owned computers.

[Read more](#)     

Email Phishing Attacks Continue



From *The Office of the [Chief Information Officer](#)*, UNT System

The Issue

Recently, we have received a number of phishing (fishing) attempts targeted at our community. The phishing attempts have been hosted on a provider called **webs.com**. A number of these attacks have been successful. As a result, we have had the attacker send tens of thousands of spam messages from our system to other internet addresses. We cannot let that continue because it will lead to blocks on messages from our address by the spam filters at other organizations. In order to minimize the threat to you, we are, as of today, quarantining all email messages with links to **webs.com**.

[Read more](#)     

Faculty Evaluation Processing Tips

By the Numbers

Down the Corridor of Years

- **1988** -- Project Eagle begun, the NTSU and GTE voice response project, which allowed NTSU to be one of the first Texas universities to implement teleregistration.
- *North Texas State University became the University of North Texas.*
- *Eight 2400/1200/300 BPS modems installed on the metro lines. UNT became an ARPANET node. UNT BBS implemented on the VAXcluster.*
- **1989** -- Six IBM AT compatible PCs and six Macintosh SEs linked to a file server on a Novell Local Area Network installed in ISB 110 to create the first general purpose, general access microcomputer lab. HP ScanJet installed in the Graphics Lab. Desktop laser printing available from ISB 110 to an Apple Laserwriter II and an HP LaserJet II.
- *The last keypunch machine available for public use was removed from the area near the ISB RJE.*
- *ANUNews and Netware VMS installed on the*



By [JoAnn Luksich](#), Data Manager, Academic Computing and User Services

It's getting to be that time of the semester again. This is an edited version of an article that appeared this time last year. - Ed.

Make sure you have the latest information when you prepare departmental evaluations for processing by Data Management. Following are some tips that will help to ensure your evaluations are processed in a timely manner.

[Read more](#)  [BOOKMARK](#) 

[New Blackboard Learn Features Coming in May 2013](#)



By [Jane Himmel](#), Associate Director, CLEAR

During regularly scheduled maintenance on **May 11, 2013**, Blackboard Learn server administrators in IT Shared Services (ITSS) will update our system to the most recent service pack Blackboard has released. This service pack includes bug fixes and introduces a few new tool enhancements (see below).

[Read more](#)  [BOOKMARK](#) 

[University Information Technology Expands](#)



By [John Hooper](#), UNT CIO and Vice Provost for Information Technology

On April 22, two new employees will join UIT. These two employees will be providing services to UIT that were formerly provided to UIT by ITSS.

[Read more](#)  [BOOKMARK](#) 

[Information Technology Gathering Student Input on Services](#)



By [Dr. Elizabeth Hinkle-Turner](#), Director - Academic Computing Technical Services

Members of University Information Technology (UIT), Academic Computing and User Services (ACUS), and Information Technology System Services (ITSS) have been recently seeking student input about computing services through surveys and focus groups.

[Read more](#)  [BOOKMARK](#) 

[Summer Hours](#)

By [Claudia Lynch](#), *Benchmarks Online* Editor

Summer is almost here! Summer 2013 consists of six sessions and not all campus facilities are open during all the sessions.*

VAXcluster.
VAXcluster
connected to
USENET.

- Twenty-four file servers across campus linked via the broadband to create, at the time, one of the largest university Novell microcomputer networks in the nation. By 1990 over 40 servers linked over 1,000 micro. Sixteen 2400 baud modems installed on local dial-up lines.
- 1990 -- An additional NAS/8083 mainframe installed to support academic computing. Administrative computing done on the NAS/8083 already in place. NAS, bought out by Hitachi, changed the names of the mainframes to Hitachi Data Systems (HDS) 8083's. VAX 6310 replaced 11/785s. Installation of VM/XA on the Academic HDS.
- Willis Library microcomputer lab opened.
- Phase I of the fiber-optic communications backbone installation completed.



[Read more](#)



ITSS Quarterly Newsletter



By **Claudia Lynch**, *Benchmarks Online* Editor

Issue 3 (April 2013) of the *ITSS Quarterly Newsletter* is now available. It is comprised of IT-related news relevant to anyone who uses or has an interest in shared services and applications throughout the UNT System and its member institutions.

[Read more](#)



Today's Cartoon

Click on the link above for an information age laugh.



Contact Us:

University Information Technology
1155 Union Circle #310709
Denton, TX 76203 USA
Voice: 940-565-4068
Fax: 940-565-4060

Visit Us:

Sage Hall, Room 338
<http://it.unt.edu/benchmarks/>



Email us:

Have questions on content or technical issues? Please contact us.
unt.uit@unt.edu



UNT System:

- [UNT Home](#)
- [UNT System](#)
- [UNT Dallas](#)
- [UNT Health Science Center](#)

Site last updated on April 22, 2016

[Disclaimer](#) | [AA/EOE/ADA](#) | [Privacy Statement](#) | [Web Accessibility Policy](#) | [State of Texas Online](#) | [Emergency Preparedness](#)

Benchmarks

A green
light to
greatness.

UNT

ABOUT BENCHMARK ONLINE SEARCH ARCHIVE SUBSCRIBE TO BENCHMARKS ONLINE

Columns, April 2013

Network Connection

Link of the Month

Helpdesk FYI

RSS Matters

Training

Staff Activities

[Home](#)

Campus Computing News



Dropbox.com installation now supported for limited use

By [Dr. Philip Baczewski](#), Senior Director of Academic Computing and User Services and Deputy Chief Information Officer for University Information Technology

Over the past several months, there has been much discussion around the use of Dropbox.com and other similar cloud services for various types of external collaboration in support of research and scholarship at UNT. Specifically, the requirement to accept an End User License Agreement (EULA) from Dropbox.com

prevented IT support staff from installing the Dropbox.com client on University-owned computers. After consultation with the UNT Office of General Counsel and ITSS IT Security, we can now report that the Dropbox.com EULA has been accepted for inclusion on the "Click Wrap" contract list maintained by the BCS purchasing department allowing installation and limited use of Dropbox.com at UNT.

Proprietary vs. Non-proprietary

Although use of Dropbox.com has been enabled for UNT faculty and staff, storage of data on such external systems is limited to items that would be considered public or non-proprietary to the University. For example, a resume, original work, or publically available data could be shared via Dropbox.com. Confidential information (FERPA, HIPAA, or otherwise controlled) or University proprietary information (regarding the internal operation of the University) should not be stored on Dropbox.com or any similar online service.

Process under development

Since more information resources are being made available on line, it is likely that there will be additional services, similar to Dropbox.com, where use could support a research or scholarly activity at UNT. A process to request approval to install, access, or use such services is under development. University Information Technology will provide additional information about making such requests for use as this process is documented. In the meantime, faculty wishing to make use of Dropbox.com may now contact their local IT support staff for assistance in installing the Dropbox.com client.



Contact Us:

University Information Technology
1155 Union Circle #310709
Denton, TX 76203 USA
Voice: 940-565-4068
Fax: 940-565-4060



Email us:

Have questions on content or technical issues? Please contact us.
unt.uit@unt.edu



UNT System:

- [UNT Home](#)
- [UNT System](#)
- [UNT Dallas](#)
- [UNT Health Science Center](#)

Visit Us:

Sage Hall, Room 338

<http://it.unt.edu/benchmarks/>

Site last updated on April 22, 2016

[Disclaimer](#) | [AA/EOE/ADA](#) | [Privacy Statement](#) | [Web Accessibility Policy](#) | [State of Texas Online](#) | [Emergency Preparedness](#)

Benchmarks

A green
light to
greatness.

UNT

ABOUT BENCHMARK ONLINE SEARCH ARCHIVE SUBSCRIBE TO BENCHMARKS ONLINE

Columns, April 2013

Network Connection

Link of the Month

Helpdesk FYI

RSS Matters

Training

Staff Activities

[Home](#) » [issues](#) » [2013-04](#) » [Email Phishing Attacks Continue](#)

Email Phishing Attacks Continue

From *The Office of the [Chief Information Officer](#)*, UNT System

The Issue

Recently, we have received a number of phishing (fishing) attempts targeted at our community. The phishing attempts have been hosted on a provider called **webs.com**. A number of these attacks have been successful. As a result, we have had the attacker send tens of thousands of spam messages from our system to other internet addresses. We cannot let that continue because it will lead to blocks on messages from our address by the spam filters at other organizations. In order to minimize the threat to you, we are, as of today, quarantining all email messages with links to **webs.com**.

Phishing is defined as someone sending a deceptive email designed to fool the email recipient into submitting personal, financial, or password information. In these phishing attacks, if someone responds to the webs.com link, it gives an attacker access to your email account which they may use for inappropriate purposes as well as access to other systems that share the same credentials at UNT.

The Response

If you receive an email with a webs.com link, that email will be quarantined and you will get an email with the subject line: **"Email Quarantined Due to Security Concerns."** You can go to the quarantine site – spam.unt.edu – examine the email and, if you are confident it is legitimate, you have two possible actions:

- Release - the email will be released from quarantine and delivered to your mailbox.
- Release and Add to Safelist - the email will be released from quarantine, delivered to your mailbox, **and** future emails from this sender will not be quarantined.

If the email is spam, you may delete it or just leave it alone and it will be automatically deleted after 30 days. Of course, this means that you must check the site within 30 days of the receipt of the quarantine notice.

You can learn more about phishing at <http://itss.untsystem.edu/phishing>.



Contact Us:

University Information Technology
1155 Union Circle #310709
Denton, TX 76203 USA
Voice: 940-565-4068
Fax: 940-565-4060

Visit Us:

Sage Hall, Room 338
<http://it.unt.edu/benchmarks/>



Email us:

Have questions on content or technical issues? Please contact us.
unt.uit@unt.edu



UNT System:

- [UNT Home](#)
- [UNT System](#)
- [UNT Dallas](#)
- [UNT Health Science Center](#)

Site last updated on April 22, 2016

[Disclaimer](#) | [AA/EOE/ADA](#) | [Privacy Statement](#) | [Web Accessibility Policy](#) | [State of Texas Online](#) | [Emergency Preparedness](#)

Benchmarks

A green
light to
greatness.

UNT

ABOUT BENCHMARK ONLINE SEARCH ARCHIVE SUBSCRIBE TO BENCHMARKS ONLINE

Columns, April 2013

Network Connection

Link of the Month

Helpdesk FYI

RSS Matters

Training

Staff Activities

[Home](#) » [issues](#) » [2013-04](#) » [Faculty Evaluation Processing Tips](#)

Faculty Evaluation Processing Tips

By [JoAnn Luksich](#), Data Manager, Academic Computing and User Services

It's getting to be that time of the semester again. This is an edited version of an article that appeared this time last year. - Ed.

Make sure you have the latest information when you prepare departmental evaluations for processing by Data Management. Following are some tips that will help to ensure your evaluations are processed in a timely manner.

1. **Request Evaluation Service:** Complete an ACUS Data Management Services request at the IT Help Center: <http://web3.unt.edu/helpdesk/service/service.php> Be sure to include a contact person and phone number as well as the correct semester and year at the top of the form.
2. **Use Correct Scantron:** Use only NCS Scantron #4521 for evaluations.
3. **Include Required Information:** Provide us with a list of professors' names, courses taught, and departmental instructor codes assigned to them.
4. **Separate and Label Sub-categories:** Clearly separate and label groups such as Faculty, Teaching Assistants, Lab, etc., using a separate container, rubber bands, etc.
5. **Organize Classes & Courses** - Each group of scantrons must be separated (paper clips, rubber bands, envelopes, etc.) at each point the instructor OR course OR section changes. Also, please be sure that scantrons are all face up, with the "cut" corner aligned.
6. **Identify each Class/Course:** Write and bubble in the Instructor number, Course number and Section number in the Identification Code field of the first scantron of each group. The following scantrons of that group do not necessarily need to be coded.

Evaluations are processed by [Data Management](#) -- in Sage Hall 336 -- in the order they are received. Please feel free to address your questions about the evaluation procedures to: joann.luksich@unt.edu or 940-369-7416



Contact Us:

University Information Technology

1155 Union Circle #310709
Denton, TX 76203 USA
Voice: 940-565-4068
Fax: 940-565-4060

Visit Us:

Sage Hall, Room 338
<http://it.unt.edu/benchmarks/>



Email us:

Have questions on content or technical issues? Please contact us.
unt.uit@unt.edu



UNT System:

- [UNT Home](#)
- [UNT System](#)
- [UNT Dallas](#)
- [UNT Health Science Center](#)

Site last updated on April 22, 2016

[Disclaimer](#) | [AA/EOE/ADA](#) | [Privacy Statement](#) | [Web Accessibility Policy](#) | [State of Texas Online](#) | [Emergency Preparedness](#)

Benchmarks

A green
light to
greatness.

UNT

ABOUT BENCHMARK ONLINE SEARCH ARCHIVE SUBSCRIBE TO BENCHMARKS ONLINE

Columns, April 2013

Network Connection

Link of the Month

Helpdesk FYI

RSS Matters

Training

Staff Activities

[Home](#) » [issues](#) » [2013-04](#) » [network-connection](#)

Network Connection

By [Dr. Philip Baczewski](#), Senior Director of Academic Computing and User Services and Deputy Chief Information Officer for University Information Technology

Adventures in Asocial Networking

I must confess that I am one of those people who have to remember to check what's posted on Facebook. I find Facebook to be amusing at first, but after about the twenty-third inspirational photo, poem of the day, or must-see Internet site, I find myself wishing that Facebook had implemented a "dislike" button to go along with the creepy "thumbs up" icon that appears by every post. I have to admit, however, that it is nice to keep up with some of the ongoing activities of family and friends.

Facebook started as a site exclusively for college students. Once it went "GA" (general availability), it zoomed in popularity with the over 35 set (perhaps over 45?) and a social phenomenon was born. I've observed that there seem to be more Facebook posts from my female family and friends than from the male population. Perhaps this is because females in the U.S. have a greater tendency to behave socially, or perhaps they just have more interesting lives. It would seem that if we have social networking, then antisocial networking would be a likely follow-on, but I guess if someone did invent the antisocial network, you might not be able to tell if it had any members.

Venus -vs- Mars?

Some might [imply](#) that Google has already invented the flip side to Facebook. [Google+](#) was launched in 2011, seemingly to stake Google's claim in the social networking arena. Interestingly, early adopters of Google+ are reported to have been over 70% male. So perhaps, Facebook is Venus and Google+ is [Mars](#).

The question of the day is, are social networks really being used to their best advantage? According to a [report](#) from the San Francisco Bay Guardian, a cat named "Lil Bub" has more than 112,000 Facebook followers and has helped raise more than \$30,000 for animal charities. This report is part of a hard-hitting five-page expose on cats on the Internet. The new question of the day is, how did the most asocial of pets become the dominant subject of the Internet?

Cats rule!

Since the mid-2000's, cats have become the subject of many an Internet post on social and other networks. The [cat meme](#) has become a frequent Internet theme. If you haven't heard of [lolcats](#), then you just don't know the Internet. (Interestingly, lolcats.com DOES have a "dislike" button.) There seems to be an entire industry behind the promulgation of Internet cats.

This cat-dominated Internet has not escaped scrutiny. Even [The New Republic](#) has [offered](#) a scientific explanation of why cats run the Internet. This leads me to ask, surely Al Gore didn't [invent the Internet](#) just as a medium for world cat domination? Or, [did he](#)?

Happy April!



Contact Us:
University Information Technology



Email us:
Have questions on content or technical



UNT System:
• [UNT Home](#)

1155 Union Circle #310709
Denton, TX 76203 USA
Voice: 940-565-4068
Fax: 940-565-4060

Visit Us:

Sage Hall, Room 338
<http://it.unt.edu/benchmarks/>

issues? Please contact us.
unt.uit@unt.edu

- [UNT System](#)
- [UNT Dallas](#)
- [UNT Health Science Center](#)

Site last updated on April 22, 2016

[Disclaimer](#) | [AA/EOE/ADA](#) | [Privacy Statement](#) | [Web Accessibility Policy](#) | [State of Texas Online](#) | [Emergency Preparedness](#)

Benchmarks

A green
light to
greatness.



UNT

ABOUT BENCHMARK ONLINE SEARCH ARCHIVE SUBSCRIBE TO BENCHMARKS ONLINE

Columns, April 2013

Network Connection

Link of the Month

Helpdesk FYI

RSS Matters

Training

Staff Activities

[Home](#) » [issues](#) » [2013-04](#) » [link-of-month](#)

Link of the Month



Blackboard Mobile Learn

Blackboard Mobile Learn is an app that you can download on your iOS, Android, Blackberry, and webOS smartphones/tablets. The app is **FREE** to all University of North Texas students, faculty, and staff. For more information and instructions on downloading the app see:

<http://bbsupport.unt.edu/MobileLearn>



Contact Us:

University Information Technology

1155 Union Circle #310709
Denton, TX 76203 USA
Voice: 940-565-4068
Fax: 940-565-4060

Visit Us:

Sage Hall, Room 338
<http://it.unt.edu/benchmarks/>



Email us:

Have questions on content or technical issues? Please contact us.
unt.uit@unt.edu



UNT System:

- [UNT Home](#)
- [UNT System](#)
- [UNT Dallas](#)
- [UNT Health Science Center](#)

Site last updated on April 22, 2016

[Disclaimer](#) | [AA/EOE/ADA](#) | [Privacy Statement](#) | [Web Accessibility Policy](#) | [State of Texas Online](#) | [Emergency Preparedness](#)

Benchmarks

A green
light to
greatness.



UNT

ABOUT BENCHMARK ONLINE SEARCH ARCHIVE SUBSCRIBE TO BENCHMARKS ONLINE

Columns, April 2013

Network Connection

Link of the Month

Helpdesk FYI

RSS Matters

Training

Staff Activities

[Home](#) » [issues](#) » [2013-04](#) » [helpdesk-fyi](#)

Helpdesk FYI

By [Jonathan "Mac" Edwards](#), CITC Helpdesk Manager

Filtering your UNT Email

The UIT Helpdesk gets a number of questions from users regarding how to filter all of the UNT Email received in their EagleConnect account based on category.

Unt Bulk Mail Message Types

Mail sent from the University Bulk Mail system will use the following key words in the subject line:

"UNT Official Message:" for UNT official notices and announcements
 "UNT Announcement:" for general announcements and event notifications
 "UNT Course Info:" for course-related information from professors

Creating Rules

To create a rule to organize Bulk Mail messages, or other emails, use the following steps:

1. Log into EagleConnect at <http://eagleconnect.unt.edu>.
2. On the right side of your screen choose **Options**.
3. From the drop-down menu select **Create an Inbox Rule**.
4. From the **Inbox Rules** section click on **New**.
5. From the "*When the message arrives, and" section choose **It includes these words in the subject...** from the dropdown menu.
6. A window will appear. Type in the specific phrase you want to filter on. For this example we will use "UNT Announcement:"
7. After entering in your phrase click the plus + sign, and then click OK. If you wish to add more values simply enter them in and use the + sign to add them to your list.
8. Under the "Do the following:" section, choose what you would like to do with the message. For our example we will **Move the message to folder...**
9. After choose **Move the message to folder...** click on the ***Select one...** option.
10. If you have previously created a Folder you wish to use select it now, otherwise use the **New Folder** option. For our example I will click on New Folder and label it **Announcement**. Then click OK.
11. Choose **Save**.

Messages that contain "UNT Announcement" in the subject line should be directed to your **Announcement** folder.

You can create similar rules for the other UNT Bulk Mail categories (listed above).

Advance/More Options

In the New Rule dialog box you may note that there is a **More Options** section. Clicking on this will open the New Inbox Rule section with a number of options for creating advanced rule sets. A more thorough description of advanced rules can be found on the Microsoft website <http://help.outlook.com/en-us/exchangelabshelp/bb899620.aspx>.



Contact Us:

University Information Technology

1155 Union Circle #310709

Denton, TX 76203 USA

Voice: 940-565-4068

Fax: 940-565-4060

Visit Us:

Sage Hall, Room 338

<http://it.unt.edu/benchmarks/>



Email us:

Have questions on content or technical issues? Please contact us.

unt.uit@unt.edu



UNT System:

- [UNT Home](#)
- [UNT System](#)
- [UNT Dallas](#)
- [UNT Health Science Center](#)

Site last updated on April 22, 2016

[Disclaimer](#) | [AA/EOE/ADA](#) | [Privacy Statement](#) | [Web Accessibility Policy](#) | [State of Texas Online](#) | [Emergency Preparedness](#)

Benchmarks

A green
light to
greatness.

UNT

ABOUT BENCHMARK ONLINE SEARCH ARCHIVE SUBSCRIBE TO BENCHMARKS ONLINE

Columns, April 2013

Network Connection

Link of the Month

Helpdesk FYI

RSS Matters

Training

Staff Activities

[Home](#) » [issues](#) » [2013-04](#) » [rss-matters](#)

RSS Matters

Research and Statistical Support University of North Texas

Hierarchical Factor Analysis

Link to the last RSS article here: [A brief reminder about Sample Size.](#) -- Ed.

By [Dr. Jon Starkweather](#), Research and Statistical Support Consultant

Lately, the issue of how to fit a hierarchical factor model has come up a few times and therefore, we thought it might be useful to do an article on the subject. We have had an **R** script on the [R short course](#) page for this subject; but perhaps a narrative or article format might be more helpful. First, we should note that hierarchical factor models are also known as higher order factor models – the term ‘higher order’ is often preferred over ‘hierarchical’ in this situation because ‘higher order’ better distinguishes these models from any kind of hierarchical mixed effects models (e.g., hierarchical linear modeling). Second, it is important to note that we are discussing *factor analysis* in this article, which is to say; modeling latent variable structure. As such, we *will not* be using a components extraction technique (e.g., principal components extraction) and instead *will* be using a factor extraction technique (e.g., minimum residual extraction, maximum likelihood extraction, etc.). For more information on the differences between component extraction and factor extraction, see the Special Issue (1990) listed in the Reference/Resources section at the end of this article (all 13 articles of which are available online at the link provided).

Simulated Data

Using simulated data will allow us to verify we are conducting the analysis correctly. Simply put, we should be able to retrieve the parameters (e.g., factor loadings) we used to construct the data (model). However, given the generation process used for simulating data, the actual data (i.e. individual score values) will be different each time the script below is run unless we specify a seed number. To ensure we are able to replicate the exact numbers below, we use the ‘set.seed’ function which specifies a Random Number Generator (RNG). Below, we are using the ‘psych’ (Revelle, 2013) package, which has dedicated functions for simulating this type of data (e.g., hierarchical structure). The psych package requires the ‘mvrnorm’ function (for creating random deviates from a multivariate normal distribution) which comes from the ‘MASS’ (Ripley, Venables, Hornik, Gebhardt, & Firth, 2013) package. We will also use the ‘GPARotation’ (Bernaards, & Jennrich, 2013) package to apply an oblique rotation strategy when we begin to fit the model. Notice below, the input script is printed in red Courier New font and the output is printed in dark blue Courier New font while the text of this article is printed in black Times New Roman font.

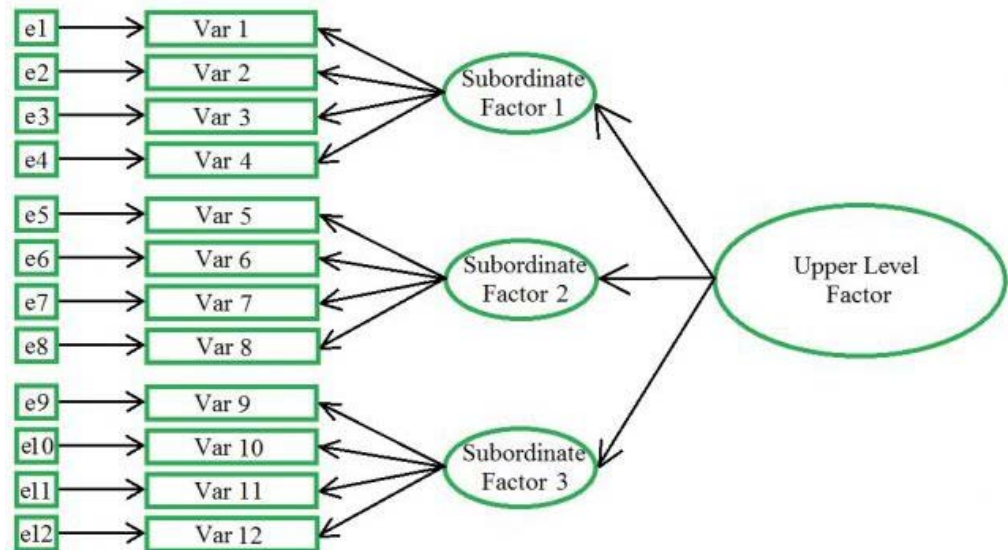
First, load the necessary packages and set the seed (which will allow us to replicate the output).

```
library(psych)
library(MASS)
library(GPARotation)
set.seed(20130403)
```

Before we begin simulating the data from a specified model, it may be helpful to create a diagram of the model we want to specify (and use to generate the data). Of course, a latent factor model assumes the Classical Test Theory (CTT) model of measurement. The CTT states that each *observed variable* (O ; or item response, or question response from a survey) is the result of the combination of the *true scores* (T ; the actual latent amount of the thing being measured) and some *errors* (E ; e.g., measurement error, model specification error, sampling bias, etc.). In simple equation form, the CTT can be stated as:

$$O = T + E$$

where the O represents the observed score, which equals the combination of T (true score) and E (error). A figure below contains the factor model we will be using for this example (note: the CTT is reinforced by this style of diagram because the arrows accurately reflect the direction of causality – observed variables, or scores, are a result of true scores [latent factor] and errors).



Next, we create a matrix object which contains the loadings between our three subordinate factors and our single higher order, or upper level, factor. Here, we are specifying what those loadings are going to be (0.60, 0.80, & 0.40).

```
sub.factor.loads <- matrix(c(.6,.8,.4), nrow = 3)
```

```
sub.factor.loads
```

```
[,1]
```

```
[1,] 0.6
```

```
[2,] 0.8
```

```
[3,] 0.4
```

Next, we create a matrix object which contains the loadings between our 12 observed variables (often referred to as items) and our three subordinate factors. The following matrix can be thought of as the Pattern Coefficient matrix or simply Pattern matrix. Each column represents one of the three (subordinate) factors and each row represents one of the twelve observed variables.

```
obs.factor.loads <- matrix(c(.8,0,0,
```

```
.7,0,0,
```

```
.6,0,0,
```

```
.5,0,0,
```

```
0,.7,0,
```

```
0,.6,0,
```

```
0,.5,0,
```

```

0,.6,0,
0,0,.6,
0,0,.5,
0,0,.7,
0,0,.4), ncol = 3, byrow = TRUE)
obs.factor.loads
  [,1] [,2] [,3]
[1,] 0.8 0.0 0.0
[2,] 0.7 0.0 0.0
[3,] 0.6 0.0 0.0
[4,] 0.5 0.0 0.0
[5,] 0.0 0.7 0.0
[6,] 0.0 0.6 0.0
[7,] 0.0 0.5 0.0
[8,] 0.0 0.6 0.0
[9,] 0.0 0.0 0.6
[10,] 0.0 0.0 0.5
[11,] 0.0 0.0 0.7
[12,] 0.0 0.0 0.4

```

Next, we specify the number of observations and the mean for each of the observed variables. Here we are specifying $n = 1000$ observations (i.e. rows of data) and we are using 10 as the mean of each of the observed variable scores, simply replicating '10' twelve times for the twelve observed variables.

```

n.obs <- 1000
means <- rep(10, 12)

```

Next, we can use the 'sim.hierarchical' function from package 'psych' to simulate the observed data based on the model we specified above. Here, we give the data the name 'data.df.1'. Notice below, we are requesting raw scores (raw = TRUE) and we are having the function return those *observed* raw scores (\$observed).

```

data.df.1 <- sim.hierarchical(gload = sub.factor.loads,
                             fload = obs.factor.loads,
                             n = n.obs,
                             raw = TRUE,
                             mu = means)$observed

```

Now we have our simulated, observed, data. If we run a summary of our data frame, we will see the mean of each variable is approximately 10 (as we specified above).

```

summary(data.df.1)

```

V1	V2	V3	V4
Min. : 7.008	Min. : 6.994	Min. : 6.980	Min. : 6.746
1st Qu.: 9.392	1st Qu.: 9.377	1st Qu.: 9.388	1st Qu.: 9.287
Median : 10.086	Median : 10.014	Median : 10.014	Median : 10.012


```

Mean :10.076 Mean :10.039 Mean :10.026 Mean : 9.993
3rd Qu.:10.749 3rd Qu.:10.708 3rd Qu.:10.658 3rd Qu.:10.640
Max. :13.258 Max. :13.469 Max. :13.063 Max. :13.024

      V5      V6      V7      V8
Min. : 7.135 Min. : 6.773 Min. : 7.234 Min. : 6.989
1st Qu.: 9.363 1st Qu.: 9.289 1st Qu.: 9.328 1st Qu.: 9.418
Median : 9.999 Median : 9.999 Median : 9.950 Median :10.025
Mean :10.008 Mean :10.001 Mean : 9.990 Mean :10.059
3rd Qu.:10.644 3rd Qu.:10.707 3rd Qu.:10.668 3rd Qu.:10.689
Max. :13.476 Max. :13.231 Max. :12.765 Max. :13.651

      V9      V10     V11     V12
Min. : 7.438 Min. : 7.011 Min. : 6.493 Min. : 6.884
1st Qu.: 9.334 1st Qu.: 9.319 1st Qu.: 9.389 1st Qu.: 9.314
Median : 9.989 Median :10.011 Median :10.090 Median : 9.976
Mean :10.014 Mean : 9.995 Mean :10.073 Mean :10.022
3rd Qu.:10.670 3rd Qu.:10.666 3rd Qu.:10.744 3rd Qu.:10.734
Max. :13.135 Max. :12.747 Max. :13.230 Max. :12.758

```

Hierarchical Factor Analysis

Next, we can begin fitting our data to the model by applying a factor analysis at the subordinate level; extracting three factors with an oblique rotation from the observed (simulated) data. It is important to realize that an oblique rotation is called for – if the factors are not or were not related; there would be no reason to suspect a higher order factor or higher order factors. We start by obtaining a correlation matrix of the observed variables and assigning that matrix to an object ('FA.L1.mat' for factor analysis level 1 matrix). Then we can pass that matrix to our factor analysis function ('fa'), also supplying the number of factors (to extract), the factor method (i.e. extraction technique; 'minres'), the number of observations ($n = 1000$), and the rotation strategy (oblimin).

```

cor.mat <- cor(data.df.1)
FA.L1 <- fa(r = cor.mat, nfactors = 3, fm = "minres", n.obs = 1000,
           rotate = "oblimin")
FA.L1
Factor Analysis using method = minres
Call: fa(r = cor.mat, nfactors = 3, n.obs = 1000, rotate = "oblimin",
        fm = "minres")
Standardized loadings (pattern matrix) based upon correlation matrix

      MR1  MR3  MR2  h2  u2
V1  0.76  0.05  0.01  0.62  0.38
V2  0.73 -0.05 -0.01  0.50  0.50
V3  0.60 -0.01  0.01  0.35  0.65
V4  0.46  0.02 -0.03  0.21  0.79
V5  0.04  0.65 -0.01  0.45  0.55
V6 -0.02  0.52  0.08  0.30  0.70
V7  0.00  0.55 -0.06  0.28  0.72
V8 -0.03  0.58  0.03  0.33  0.67
V9  0.04  0.01  0.62  0.40  0.60

```

V10 -0.01 0.01 0.49 0.25 0.75

V11 -0.02 0.00 0.68 0.45 0.55

V12 0.00 -0.02 0.43 0.18 0.82

MR1 MR3 MR2

SS loadings 1.68 1.36 1.28

Proportion Var 0.14 0.11 0.11

Cumulative Var 0.14 0.25 0.36

Proportion Explained 0.39 0.31 0.30

Cumulative Proportion 0.39 0.70 1.00

With factor correlations of

MR1 MR3 MR2

MR1 1.00 0.48 0.25

MR3 0.48 1.00 0.37

MR2 0.25 0.37 1.00

Test of the hypothesis that 3 factors are sufficient.

The degrees of freedom for the null model are 66 and the objective function was 2.1 with Chi Square of 2086.88

The degrees of freedom for the model are 33 and the objective function was 0.02

The root mean square of the residuals (RMSR) is 0.01

The df corrected root mean square of the residuals is 0.02

The harmonic number of observations is 1000 with the empirical chi square 18.53 with prob < 0.98

The total number of observations was 1000 with MLE Chi Square = 21.88 with prob < 0.93

Tucker Lewis Index of factoring reliability = 1.011

RMSEA index = 0 and the 90 % confidence intervals are NA 0.007

BIC = -206.08

Fit based upon off diagonal values = 1

Measures of factor score adequacy

MR1 MR3 MR2

Correlation of scores with factors 0.88 0.84 0.83

Multiple R square of scores with factors 0.78 0.71 0.68

Minimum correlation of possible factor scores 0.56 0.42 0.37

Notice in the above output, the 'fa' function used the Minimum Residual ("minres") factor method (extraction); this is the default. Given the simulated nature of the data, we would get the same substantive results had we applied the Maximum Likelihood ("ml") factor method (extraction). The second thing to take note of in the output is that the pattern matrix (i.e. loadings; e.g., V1 = 0.76, V2 = 0.73, V3 = 0.60, V4 = 0.46 for Subordinate factor 1) is very similar to what we specified when we simulated the data (e.g., V1 = 0.80, V2 = 0.70, V3 = 0.60, V4 = 0.50 for Subordinate factor 1). These loadings will not be exactly as specified due to the 'random' nature of the scores produced by the 'mvrnorm' function (i.e. produces multivariate *random* normal deviates – deviation scores); but the

loadings will be very close. The next part of the output to pay particular attention to is the factor correlation matrix. Be advised, this correlation matrix is not (and will not be) the same as the correlation matrix resulting from saving factor scores and correlating them. The factor correlation matrix is commonly referred to as the 'Phi' matrix and can be extracted from the output by name using the \$ operator.

```
FA.L1.mat <- FA.L1$Phi
FA.L1.mat
      [,1] [,2] [,3]
[1,] 1.0000000 0.4817366 0.2451246
[2,] 0.4817366 1.0000000 0.3673734
[3,] 0.2451246 0.3673734 1.0000000
```

Next, we can apply the upper level factor analysis to the Phi matrix from above; specifying 1 factor (to be extracted) using the minimum residual (minres) factor method (i.e. extraction), specifying the number of observations ($n = 1000$), and no rotation (rotate = "NULL").

```
FA.L2 <- fa(r = FA.L1.mat, nfactors = 1, fm = "minres", n.obs = 1000,
           rotate = "NULL")
```

```
FA.L2
```

```
Factor Analysis using method = minres
```

```
Call: fa(r = FA.L1.mat, nfactors = 1, n.obs = 1000, rotate = "NULL",
        fm = "minres")
```

```
Standardized loadings (pattern matrix) based upon correlation matrix
```

```
MR1  h2  u2
1 0.57 0.32 0.68
2 0.85 0.72 0.28
3 0.43 0.19 0.81
```

```
MR1
```

```
SS loadings 1.23
```

```
Proportion Var 0.41
```

```
Test of the hypothesis that 1 factor is sufficient.
```

```
The degrees of freedom for the null model are 3 and the objective function was 0.42 with Chi Square of 414.88
```

```
The degrees of freedom for the model are 0 and the objective function was 0
```

```
The root mean square of the residuals (RMSR) is 0
```

```
The df corrected root mean square of the residuals is NA
```

```
The harmonic number of observations is 1000 with the empirical chi square 0 with prob < NA
```

```
The total number of observations was 1000 with MLE Chi Square = 0 with prob < NA
```

```
Tucker Lewis Index of factoring reliability = -Inf
```

```
Fit based upon off diagonal values = 1
```

Measures of factor score adequacy

MR1

Correlation of scores with factors 0.88*Multiple R square of scores with factors* 0.77*Minimum correlation of possible factor scores* 0.53

Notice in the output above, the loadings matrix, or pattern matrix, (0.57, 0.85, & 0.43) very closely resembles the coefficients we specified in creating the data (0.60, 0.80, & 0.40). These are the loadings between the subordinate factors and the upper level factor.

Factor Scores

Next, we can demonstrate how the correlations among the factor scores will be different than the factor correlations (Phi matrix). Here, we again apply the 'fa' function but in order to get the factor scores, we must supply the raw data (data frame) matrix instead of the correlation matrix – of course, we also need to specify what type of scores we want. Here we specify standard regression scores, however; other methods are available (e.g., Bartlett's, Anderson's, etc.).

```
fa.l1 <- fa(r = data.df.1, nfactors = 3, fm = "minres", n.obs = 1000,
           rotate = "oblimin", scores = "regression")
```

fa.l1

Factor Analysis using method = minres

```
Call: fa(r = data.df.1, nfactors = 3, n.obs = 1000, rotate = "oblimin",
        scores = "regression", fm = "minres")
```

Standardized loadings (pattern matrix) based upon correlation matrix

	MR1	MR3	MR2	h2	u2
V1	0.76	0.05	0.01	0.62	0.38
V2	0.73	-0.05	-0.01	0.50	0.50
V3	0.60	-0.01	0.01	0.35	0.65
V4	0.46	0.02	-0.03	0.21	0.79
V5	0.04	0.65	-0.01	0.45	0.55
V6	-0.02	0.52	0.08	0.30	0.70
V7	0.00	0.55	-0.06	0.28	0.72
V8	-0.03	0.58	0.03	0.33	0.67
V9	0.04	0.01	0.62	0.40	0.60
V10	-0.01	0.01	0.49	0.25	0.75
V11	-0.02	0.00	0.68	0.45	0.55
V12	0.00	-0.02	0.43	0.18	0.82

MR1 MR3 MR2

SS loadings 1.68 1.36 1.28*Proportion Var* 0.14 0.11 0.11*Cumulative Var* 0.14 0.25 0.36*Proportion Explained* 0.39 0.31 0.30*Cumulative Proportion* 0.39 0.70 1.00*With factor correlations of*

```

MR1 MR3 MR2
MR1 1.00 0.48 0.25
MR3 0.48 1.00 0.37
MR2 0.25 0.37 1.00

```

Test of the hypothesis that 3 factors are sufficient.

The degrees of freedom for the null model are 66 and the objective function was 2.1 with Chi Square of 2086.88

The degrees of freedom for the model are 33 and the objective function was 0.02

The root mean square of the residuals (RMSR) is 0.01

The df corrected root mean square of the residuals is 0.02

The harmonic number of observations is 1000 with the empirical chi square 18.53 with prob < 0.98

The total number of observations was 1000 with MLE Chi Square = 21.88 with prob < 0.93

Tucker Lewis Index of factoring reliability = 1.011

RMSEA index = 0 and the 90 % confidence intervals are NA 0.007

BIC = -206.08

Fit based upon off diagonal values = 1

Measures of factor score adequacy

```

MR1 MR3 MR2
Correlation of scores with factors      0.88 0.84 0.83
Multiple R square of scores with factors  0.78 0.71 0.68
Minimum correlation of possible factor scores 0.56 0.42 0.37

```

Next, we extract the factor scores from the (lower case) lower level factor analysis output (fa.l1) using the \$ operator and assign them to the 'fa.l1.sc' object. We can also correlate those scores and notice *how different* those correlations are from the factor correlations matrix (Phi matrix).

```

fa.l1.sc <- data.frame(fa.l1$scores)
cor(fa.l1.sc)
      X1      X2      X3
X1 1.0000000 0.6004052 0.3217752
X2 0.6004052 1.0000000 0.4805090
X3 0.3217752 0.4805090 1.0000000

```

As a result of these differences (between the factor score correlations and the factor correlations), the upper level factor loadings are going to be more biased (i.e. quite different than what we specified when generating the data and when we did the upper level factor analysis with the correct [Phi] matrix of association). To verify this, we apply the factor analysis to the factor scores themselves.

```

fa.l2 <- fa(r = fa.l1.sc, nfactors = 1, fm = "minres", n.obs = 1000,
rotate = "oblimin", scores = "regression")

```

*fa.l2**Factor Analysis using method = minres**Call: fa(r = fa.l1.sc, nfactors = 1, n.obs = 1000, rotate = "oblimin",
scores = "regression", fm = "minres")**Standardized loadings (pattern matrix) based upon correlation matrix*

	MR1	h2	u2
X1	0.63	0.40	0.60
X2	0.95	0.90	0.10
X3	0.51	0.26	0.74

*MR1**SS loadings 1.56**Proportion Var 0.52**Test of the hypothesis that 1 factor is sufficient.**The degrees of freedom for the null model are 3 and the objective function was 0.71 with Chi Square of 709.8**The degrees of freedom for the model are 0 and the objective function was 0**The root mean square of the residuals (RMSR) is 0**The df corrected root mean square of the residuals is NA**The harmonic number of observations is 1000 with the empirical chi square 0 with prob < NA**The total number of observations was 1000 with MLE Chi Square = 0 with prob < NA**Tucker Lewis Index of factoring reliability = -Inf**Fit based upon off diagonal values = 1**Measures of factor score adequacy**MR1**Correlation of scores with factors 0.95**Multiple R square of scores with factors 0.91**Minimum correlation of possible factor scores 0.81*

The output above shows the higher order factor loadings (0.62, 0.95, & 0.51) are substantively different (i.e. more biased) than what we would expect (0.60, 0.80, & 0.40); and what we found farther above using the factor correlation, or Phi, matrix (0.57, 0.85, & 0.43).

Upper Level Factor Scores

Unfortunately, the 'fa' function cannot return the factor scores when supplied a correlation matrix as was done originally (i.e. FA.L2). So, in order to calculate the upper level factor scores and save them for use in further analyses (e.g., Structural Equation Modeling), we must use the factor correlation matrix (Phi matrix) to generate some lower level (3 factor) raw data on which we can then apply the upper level (1 factor) analysis – which will allow us to save the higher level factor scores for future use. Below, we demonstrate this by first using the 'mvrnorm' function; supplying it with the number of cases/rows the data should have (equal to the number of rows of the original data [nrow(data.df.1)]), the mean we want each of the three factors to have [three means of zero: rep(0,3)], and the all-important matrix to which the data should conform [FA.L1.mat (which is the Phi matrix from above)]. The 'empirical = TRUE' argument simply requests that the data conform *exactly* to the matrix we supply. Once the data has been

created, we can do a summary of the data frame and check the correlations to see if they indeed match the Phi matrix from above; and they do.

```
L2.df <- data.frame(mvnorm(n = nrow(data.df.1), rep(0,3),
  FA.L1.mat, empirical = TRUE))
```

```
summary(L2.df)
```

```
      X1          X2          X3
Min.  :-4.375742  Min.  :-3.54389  Min.  :-2.83910
1st Qu.: -0.688568  1st Qu.: -0.68134  1st Qu.: -0.74282
Median : -0.002373  Median :  0.01529  Median : -0.01382
Mean   :  0.000000  Mean   :  0.00000  Mean   :  0.00000
3rd Qu.:  0.691442  3rd Qu.:  0.69003  3rd Qu.:  0.68826
Max.   :  3.776186  Max.   :  2.76209  Max.   :  3.65736
```

```
cor(L2.df)
```

```
      X1      X2      X3
X1  1.000000  0.4817366  0.2451246
X2  0.4817366  1.0000000  0.3673734
X3  0.2451246  0.3673734  1.0000000
```

Next, we can then use the newly created 'raw' data (L2.df [data frame]) to apply the upper level (1 factor) model. The key point here is: we can save the upper level factor scores because we are supplying 'raw' data we just created – and that raw data exactly conforms to the Phi matrix.

```
FA.L2.2 <- fa(r = L2.df, nfactors = 1, fm = "minres", n.obs = 1000,
  rotate="NULL", scores = "regression")
```

```
FA.L2.2
```

```
Factor Analysis using method = minres
```

```
Call: fa(r = L2.df, nfactors = 1, n.obs = 1000, rotate = "NULL", scores = "regression",
  fm = "minres")
```

```
Standardized loadings (pattern matrix) based upon correlation matrix
```

```
MR1  h2  u2
X1  0.57  0.32  0.68
X2  0.85  0.72  0.28
X3  0.43  0.19  0.81
```

```
MR1
```

```
SS loadings  1.23
```

```
Proportion Var 0.41
```

Test of the hypothesis that 1 factor is sufficient.

The degrees of freedom for the null model are 3 and the objective function was 0.42 with Chi Square of 414.88

The degrees of freedom for the model are 0 and the objective function was 0

The root mean square of the residuals (RMSR) is 0

The df corrected root mean square of the residuals is NA

The harmonic number of observations is 1000 with the empirical chi square 0 with prob < NA

The total number of observations was 1000 with MLE Chi Square = 0 with prob < NA

Tucker Lewis Index of factoring reliability = -Inf

Fit based upon off diagonal values = 1

Measures of factor score adequacy

MR1

Correlation of scores with factors 0.88

Multiple R square of scores with factors 0.77

Minimum correlation of possible factor scores 0.53

Note in the output above the loadings between the lower level (3) factors and the upper level (1) factor are identical to what was produced when the factor analysis was done on the (lower level 3) factor correlation, or Phi, matrix. Now we can extract the factor scores from the output object using the \$ operator and the 'scores' name. Below we assign those factor scores to the object 'L2.scores' and create a summary of those scores. Notice, the factor scores are centered on zero (i.e. standardized) because the latent factor has an unknown metric.

```
L2.scores <- FA.L2.2$scores
```

```
summary(L2.scores)
```

```
MR1
```

```
Min. :-2.95558
```

```
1st Qu.: -0.57108
```

```
Median : -0.01473
```

```
Mean : 0.00000
```

```
3rd Qu.: 0.57839
```

```
Max. : 2.56140
```

Of course, if our goal from the start was to get these (upper level, 1 factor) factor scores, then we would have simply created the 'raw' data after the first factor analysis and supplied it to the second factor analysis while requesting the scores. The script below accomplishes this goal without all the comments, explanation, and output.

```
fa1 <- fa(r = data.df.1, nfactors = 3, fm = "minres", n.obs = 1000
```

```
rotate = "oblimin")
```

```
fa1.df <- data.frame(mvnrnorm(n = nrow(data.df.1), rep(0,3),
```

```
fa1$Phi, empirical = TRUE))
```

```
fa2 <- fa(r = fa1.df, nfactors = 1, fm = "minres", n.obs = 1000,
```

```
rotate = "none", scores = "regression")
```

```
fa2.sc <- fa2$scores
```

Conclusions

It is important to note that the examples above involve a relatively simple factor structure, however; the general procedures would be the same for more complex structures (i.e. multiple upper level factors, or multiple upper levels – levels 1, 2, 3, 4, etc.). The importance of having knowledge of these procedures in one's repertoire should be apparent, given the frequency of hierarchical measurement structures in the social sciences. Next month, we will show how to use the upper level factor scores in a larger (Structural Equation) model by incorporating them into a structural model with other latent variables.

Until next time, happy computing...

References / Resources

- Bernaards, C. A., & Jennrich, R. I. (2013). Package '[GPArotation](#)': Gradient Projection Algorithm Rotation for Factor Analysis. *Educational and Psychological Measurement*, 65, 676 – 696.
- Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.) Hillsdale, NJ: Lawrence Earlbaum Associates.
- McDonald, R. P. (1985). *Factor analysis and related methods*. Hillsdale, NJ: Lawrence Earlbaum Associates.
- McDonald, R. P. (1999). *Test theory: A unified treatment*. Mahwah, NJ: Lawrence Earlbaum Associates.
- Mulaik, S. A., & Quartelli, D. A. (1997). First order or higher order general factor? *Structural Equation Modeling*, 4(3), 193 – 211.
- Pyryt, M. C. (2000). Finding "g": Easy viewing through higher order factor analysis. *Gifted Child Quarterly*, 44(3), 190 – 193.
- Revelle, 2013. Package '[psych](#)': Procedures for Personality and Psychological Research.
- Revelle. (in prep.). Psychometric theory with applications in R. Available (draft) at: http://personality-project.org/r/r_guide.html and <http://personality-project.org/r/book/> And, specifically; here: <http://personality-project.org/r/book/Chapter6.pdf>
- Ripley, B., Venables, B., Hornik, K., Gebhardt, A., & Firth, D. (2013). Package '[MASS](#)': Functions and datasets to support Venables and Ripley, 'Modern Applied Statistics with S' (4th ed.), 2002.
- Schmid, J., & Leiman, J. M. (1957). The development of hierarchical factor solutions. *Psychometrika*, 22, 83 – 90.
- Special Issue. (1990). *The Journal of the Society of Multivariate Experimental Psychology. Multivariate Behavioral Research*, 25(1), 1 – 136. **All 13 Articles available at:**
<http://www.tandfonline.com/toc/hmbr20/25/1>
- Wherry, R. J. (1959). Hierarchical factor solutions without rotation. *Psychometrika*, 24, 45 – 51.
- Wolff, H., & Preising, K. (2005). Exploring item and higher order factor structure with the Schmid-Leiman solution: Syntax codes for SPSS and SAS. *Behavior Research Methods*, 37(1), 48 – 58.
- Yung, Y., Thissen, D., & McLeod, L. D. (1999). On the relationship between the higher-order factor model and the hierarchical factor model. *Psychometrika*, 64(2), 113 – 128.



Contact Us:

University Information Technology
1155 Union Circle #310709
Denton, TX 76203 USA
Voice: 940-565-4068
Fax: 940-565-4060

Visit Us:

Sage Hall, Room 338
<http://it.unt.edu/benchmarks/>



Email us:

Have questions on content or technical issues? Please contact us.
unt.uit@unt.edu



UNT System:

- [UNT Home](#)
- [UNT System](#)
- [UNT Dallas](#)
- [UNT Health Science Center](#)

Site last updated on April 22, 2016

[Disclaimer](#) | [AA/EOE/ADA](#) | [Privacy Statement](#) | [Web Accessibility Policy](#) | [State of Texas Online](#) | [Emergency Preparedness](#)

Benchmarks

A green
light to
greatness.



UNT

ABOUT BENCHMARK ONLINE SEARCH ARCHIVE SUBSCRIBE TO BENCHMARKS ONLINE

Columns, April 2013

Network Connection

Link of the Month

Helpdesk FYI

RSS Matters

Training

Staff Activities

[Home](#) » [issues](#) » [2013-04](#) » [short-courses](#)

Training

By [Claudia Lynch](#), *Benchmarks Online* Editor

Do you need training on widely used computer programs including those used in statistical analysis? If so, this monthly *Benchmarks Online* column is for you.

Statistical Analysis

Instructor-led courses are offered only by special request. Please contact an [RSS member](#) or [Claudia Lynch](#) if you are interested in taking such a class or wish to have someone offer a class for your students. **SPSS and SAS courses are now offered [online only](#)**. RSS staff will still be available for consultation on those topics, however. Another class available online is [Introduction to R](#). Make sure and check out the **RSS Matters** article [Statistical Resources](#) in the July 2012 issue of *Benchmarks Online*.

Special classes can always be arranged with the RSS staff. Also, you can **always** contact the RSS staff for one-on-one [consultation](#). **Please read the [FAQ](#) before requesting an appointment though.**

Especially for Faculty and Staff Members

In addition to the online statistical courses, which are available to students, faculty and staff, staff and faculty members can take courses offered through the [Human Resources Department](#) (they have a new comprehensive training curriculum), and the [Center for Learning Enhancement, Assessment, and Redesign](#) (CLEAR). Additionally, the [Center for Achievement and Lifelong Learning](#) (CALL) offers a variety of courses, usually for a small fee.

EIS training is available and expanding. Click [here](#) for online tutorials.

Microsoft IT Academy

All **students, faculty and staff** within the UNT System now have access to online learning via the Microsoft IT Academy. See [this article](#) in the July 2012 issue of *Benchmarks Online* for more information.

Microsoft E-Learning

Microsoft E-Learning courses are available for **faculty and staff** via our UNT-Microsoft Campus Agreement. Please contact Claudia Lynch at lynch@unt.edu for instructions on accessing this training. If you haven't accessed the training since last year you will need to get a new access code. UNT, UNTHSC and UNTSYSTEM e-mail addresses are now able to access Microsoft E-Learning.

Microsoft Outlook Tutorials and much more

The Enterprise Messaging and Directory Services Group has all sorts of useful information on their [website](#), including tutorials and FAQs.

Central Web Support

Central Web Support [provides](#) "End-User and Administrative Support for hosted general web sites, and Drupal websites for academic and administrative departments." Visit their [website](#) for "How-Tos about Everything."

CLEAR

CLEAR offers courses especially for Faculty Members. A list of topics and further information can be found [here](#).

Apple Seminars: Teaching with iPad

April 18: <http://clear.unt.edu/apple-seminars-teaching-ipad-5>

Open Education: The Business & Policy Case for OER (Open Educational Resources) -- Willis Library Forum

April 18: <http://forums.lt.unt.edu/index.php?topic=810.msg835>

Ed2go

Ed2go are courses that are offered, for a fee, to UNT faculty, staff and students as well as the general public. According to the CALL [website](#):

CALL has partnered up to provide online learning on a variety of topics. From standardized test preparation to database programming to training for libraries and their staff, there's a variety of areas from which to choose in online learning.

The online minicourses, provided in conjunction with Ed2go, are standardized 12-lesson modules released over a six week period. (Courses are active for eight weeks to provide some flexibility). Each module features a quiz. Lessons are instructor-led and course participants and instructor communicate through a course discussion board. Lessons can be downloaded and saved. At the end of the course there is a final quiz. A passing grade opens a window that allows students to print out a course completion certificate.

Most courses are \$89, and UNT faculty, staff and students may receive a \$10 discount.



For additional information surf over to <http://www.ed2go.com/unt/>

Ed2go has a blog! Click on the logo on the right to find out more information on company news, videos, career advice and tips from ed2go instructors.

Information Security Awareness

The UNT Information Security team offers Information Security Awareness [courses](#) to all UNT faculty and staff. Topics to be covered will include workstation security, sensitive data handling, copyright infringement issues, identity theft, email security, and more.

It is a policy requirement that ALL staff take an information security course at least once a year.

Please contact [Gabe Marshall](#) in ITSS Information Security if you have any questions, or would like more information about the online training. **Either attending a live class or going through the online training will count towards your training requirement.** You can also request a customized course to be taught for your department.

Business Service Center Training & Development

Providing training to UNT System institutions: <http://bsc.untsystem.edu/training-development> The April *BSC Solution Source Newsletter* can be found here: <http://bsc.untsystem.edu/bsc-solution-source-newsletter-april-2013>. It includes a list of training opportunities.

Alternate Forms of Training

Many of the General Access Labs around campus have tutorials installed on their computers.

See <http://www.gacl.unt.edu/> for a list of labs and their locations. The Willis Library, for example, has a [list of Tutorials and Software Support](#). The Library Instructional Unit also offers workshops and training, including "tech skills" training. Visit their websites for more information: <http://www.library.unt.edu/library-instruction>

The [Training Website](#) has all sorts of information about alternate forms of training. Computer Based Training (CBT) and Web-based training are some of the alternatives offered, although due to the rising costs of training, shrinking budgets and changing technology, computer-based training at UNT is in a state of transition. For up-to-date information on CBT at UNT, see the CBT [website](#).

Info~Tech, UNT's new IT Research Partner

Info~Tech has replaced Gartner Core Research Services as UNT's IT research partner. For more information see the August 2012 *Campus Computing News* [article](#).

State of Texas Department of Information Resources

Another possible source of training for staff and, perhaps, faculty members is the Texas Department of Information Resources. A look at their Education and Training [website](#) reveals some interesting possibilities.

New Horizons Computer Learning Centers

New Horizons is a DIR vendor, which means that state agencies, like UNT, get special pricing for their services negotiated at the State level (click [here](#) for more information about DIR vendors). [New Horizons](#) offers courses at their own facilities in Dallas and Fort Worth, but will arrange for onsite training as well.



Contact Us:

University Information Technology

1155 Union Circle #310709
Denton, TX 76203 USA
Voice: 940-565-4068
Fax: 940-565-4060

Visit Us:

Sage Hall, Room 338
<http://it.unt.edu/benchmarks/>



Email us:

Have questions on content or technical issues? Please contact us.
unt.uit@unt.edu



UNT System:

- [UNT Home](#)
- [UNT System](#)
- [UNT Dallas](#)
- [UNT Health Science Center](#)

Site last updated on April 22, 2016

[Disclaimer](#) | [AA/EOE/ADA](#) | [Privacy Statement](#) | [Web Accessibility Policy](#) | [State of Texas Online](#) | [Emergency Preparedness](#)

Benchmarks

A green
light to
greatness.



UNT

[ABOUT BENCHMARK ONLINE](#) [SEARCH ARCHIVE](#) [SUBSCRIBE TO BENCHMARKS ONLINE](#)

Columns, April 2013

[Network Connection](#)

[Link of the Month](#)

[Helpdesk FYI](#)

[RSS Matters](#)

[Training](#)

[Staff Activities](#)

[Home](#) » [issues](#) » [2013-04](#) » [staff-activities](#)

Staff Activities

Staff activities for [UIT](#) are reported in this column. ITSS staff activities are handled by [ITSS Communications](#).

Transitions

New Employees:

- **Alex Lucas**, UIT Administrative Assistant (part-time).

InHouse Prize Winners

We have some more *InHouse* prize winners! **Mark Hurtado**, UIT Administrative Information Technology Services student assistant (part-time), was a winner in the March 18 [InHouse prize giveaway](#). **Christopher Horiates**, IT Manager, UIT Administrative Information Technology Services, was a winner in the April 8 [InHouse prize giveaway](#).



Contact Us:

University Information Technology
1155 Union Circle #310709
Denton, TX 76203 USA
Voice: 940-565-4068
Fax: 940-565-4060

Visit Us:

Sage Hall, Room 338
<http://it.unt.edu/benchmarks/>



Email us:

Have questions on content or technical issues? Please contact us.
unt.uit@unt.edu



UNT System:

- [UNT Home](#)
- [UNT System](#)
- [UNT Dallas](#)
- [UNT Health Science Center](#)

Site last updated on April 22, 2016

[Disclaimer](#) | [AA/EOE/ADA](#) | [Privacy Statement](#) | [Web Accessibility Policy](#) | [State of Texas Online](#) | [Emergency Preparedness](#)

Benchmarks

A green
light to
greatness.

UNT

ABOUT BENCHMARK ONLINE SEARCH ARCHIVE SUBSCRIBE TO BENCHMARKS ONLINE

Columns, April 2013

Network Connection

Link of the Month

Helpdesk FYI

RSS Matters

Training

Staff Activities

[Home](#) » [issues](#) » [2013-04](#) » [New Blackboard Learn Features Coming in May 2013](#)

New Blackboard Learn Features Coming in May 2013

By [Jane Himmel](#), Associate Director, CLEAR

During regularly scheduled maintenance on **May 11, 2013**, Blackboard Learn server administrators in IT Shared Services (ITSS) will update our system to the most recent service pack Blackboard has released. This service pack includes bug fixes and introduces a few new tool enhancements (see below).

ITSS anticipates that this update can be installed within the regular three-hour maintenance window and that no additional downtime will be required. Although there will be minor changes to the look and feel of the Blackboard Learn interface, there will be **no** impact on course organization or content as a result of this service pack installation.

New Features

With this service pack, Blackboard has introduced a few enhancements to the tools you already use. I am including a brief overview here, but I encourage you to visit CLEAR's Faculty Support site to learn more about what will be [new in Blackboard this summer](#):

- Blackboard Learn's **Calendar** has been completely rebuilt, now allowing customization, color-coding, and choice of views.
- Blackboard has thoroughly redesigned the **Discussions** interface while adding some new functionality as a direct response to instructor feedback. Included in the enhancements are inline replies, conditional highlighting of instructor posts, and a setting that permits instructors to specify that students must enter their own thread before viewing other threads in a forum.
- The new **Item Analysis** feature helps you refine your tests and quizzes by evaluating the quality and validity of each question and that question's ability to discriminate between students who understand the material and those who do not.
- The new **Video Everywhere** capability allows you to record, embed, and reuse video throughout a course. This feature can be accessed through the content editor – so anywhere you add content within a course, you can add video. (Requires a YouTube account.)
- The **My Blackboard Posts** tool consolidates posts from all the collaborative tools (Discussion Boards, Wikis, Blogs, and Journals) from all your courses and organizations, so you can easily view them in one stream.
- The new course **Retention Center** in Blackboard Learn replaces the **Early Warning System** and automatically brings attention to student performance and engagement risk factors and quickly triggers alerts - with no set up required.

CLEAR has been testing the service pack in a development environment this spring and will be sharing tip sheets on several of the new features this month. Currently, you will find short videos created by Blackboard that demonstrate each of the new features in action on our CLEAR Faculty Support site: <http://bbsupport.unt.edu/NewforSummer>. Work to update student materials on support websites as well as the Blackboard Student Orientation course is also underway.



Contact Us:



Email us:



UNT System:



University Information Technology

1155 Union Circle #310709
Denton, TX 76203 USA
Voice: 940-565-4068
Fax: 940-565-4060

Visit Us:

Sage Hall, Room 338
<http://it.unt.edu/benchmarks/>



Have questions on content or technical issues? Please contact us.
unt.uit@unt.edu



- [UNT Home](#)
- [UNT System](#)
- [UNT Dallas](#)
- [UNT Health Science Center](#)

Site last updated on April 22, 2016

[Disclaimer](#) | [AA/EOE/ADA](#) | [Privacy Statement](#) | [Web Accessibility Policy](#) | [State of Texas Online](#) | [Emergency Preparedness](#)

Benchmarks

A green
light to
greatness.



UNT

ABOUT BENCHMARK ONLINE SEARCH ARCHIVE SUBSCRIBE TO BENCHMARKS ONLINE

Columns, April 2013

Network Connection

Link of the Month

Helpdesk FYI

RSS Matters

Training

Staff Activities

[Home](#) » [issues](#) » [2013-04](#) » [University Information Technology Expands](#)

University Information Technology Expands

By [John Hooper](#), UNT CIO and Vice Provost for Information Technology

On April 22, two new employees will join UIT. These two employees will be providing services to UIT that were formerly provided to UIT by ITSS. **Carrie Stoeckert** will be joining us from the BSC where many of you may know her from her role in legal work in procurement. As the UIT Assistant Director, Carrie will be responsible for information technology planning coordination, budgeting, IT policy management, and compliance services, and related functions. She will also provide research and analytical support for the Vice Provost for Information Technology and CIO. **Mari Jo French** will be coming to us from Student Affairs, but many of you may know Mari Jo from her long stint in the Office of Enrollment Management. As Administrative Coordinator, she will provide support for the Vice Provost and lead management services for UIT. In the latter role, she will oversee and coordinate departmental operations including but not limited to human resources, payroll, purchasing, program planning and implementation, physical security, and meeting planning. Lin Nesloney will report to Mari Jo. I am very pleased that Carrie and Mari Jo are joining us. I know you will find both of them to be personable, productive and proficient.

In addition to those yet to arrive, **Alex Lucas** has joined us as our student worker and is already contributing to several projects.

I want to extend my thanks to Michael DiPaolo of ITSS and Rhonda Holmes and her staff for continuing to support us during this transition. Their support has never wavered and is much appreciated. I also want to thank Lin Nesloney who has also provided great support during the transition. Her flexibility and willingness to step in wherever needed is appreciated.



Contact Us:

University Information Technology
1155 Union Circle #310709
Denton, TX 76203 USA
Voice: 940-565-4068
Fax: 940-565-4060

Visit Us:

Sage Hall, Room 338
<http://it.unt.edu/benchmarks/>



Email us:

Have questions on content or technical issues? Please contact us.
unt.uit@unt.edu



UNT System:

- [UNT Home](#)
- [UNT System](#)
- [UNT Dallas](#)
- [UNT Health Science Center](#)

Site last updated on April 22, 2016

[Disclaimer](#) | [AA/EOE/ADA](#) | [Privacy Statement](#) | [Web Accessibility Policy](#) | [State of Texas Online](#) | [Emergency Preparedness](#)

Benchmarks

A green
light to
greatness.



UNT

[ABOUT BENCHMARK ONLINE](#) [SEARCH ARCHIVE](#) [SUBSCRIBE TO BENCHMARKS ONLINE](#)

Columns, April 2013

[Network Connection](#)

[Link of the Month](#)

[Helpdesk FYI](#)

[RSS Matters](#)

[Training](#)

[Staff Activities](#)

[Home](#) » [issues](#) » [2013-04](#) » [Information Technology Gathering Student Input on Services](#)

Information Technology Gathering Student Input on Services

By [Dr. Elizabeth Hinkle-Turner](#), Director - Academic Computing Technical Services

Members of University Information Technology (UIT), Academic Computing and User Services (ACUS), and Information Technology System Services (ITSS) have been recently seeking student input about computing services through surveys and focus groups. The last concerted effort to get a broad spectrum of student opinion was the [2004 Student Computing Survey](#) - a traditional survey tool - which at the time had a (statistically speaking) significant response rate of almost 1000 members of the student body.

This year - based on research about alternative ways of gathering data and inspired by many of the offices and divisions featured in the annual Student Portraits conference - the information technology areas opted to not utilize the long form survey but instead, gather students' opinions, needs, and desires about computing services in short surveys, one-question opinion polls and focus groups featuring undergraduate, graduate and commuter students. This initiative was conceived and organized within the ACUS division of UIT.

In Fall 2011 MKTG 5250 (Information for Strategic Marketing Decisions) lead by Dr. Gopala "GG" Ganesh developed a short survey as part of a class project. About 500 self-selected students answered questions about their awareness of computing services available to them on campus. Additionally a short 4-question survey was given to users of the General Access Computer Labs about what personal computing and mobile communication devices they owned and utilized and what they preferred to do on these devices.

After these short surveys it was determined that more input from diverse resources would be beneficial. The idea of focus groups was discussed and in collaboration and cooperation with the Division of Student Affairs, students have been interviewed in groups about a variety of services including wireless, the new Blackboard Learn system, registering and paying for classes via my.unt.edu, mobile apps, email and lab and learning commons use among other topics. All focus group members were very forth-coming and engaged in the questions and the outcome of the discussions. Group discussions are just now being transcribed and will be studied closely and also distributed to various student computing service areas for their use.



Students in the focus groups expressed strong support for the new computing setup in Willis Library

The focus groups were convened for the purpose of determining how best to allocate student technology fees in terms of services and resources based on how UNT students are utilizing and perceiving the current services as being critical to their success at the university. The project is not complete: the General Access Computer Labs are currently running a one-question survey about lab usage that students are encouraged to answer each time they use a lab over the next few weeks. Discussions in some large classes are also being scheduled to gather even more student input. The results of all this research will be considered in current and future project proposals, planning and development.



Contact Us:

University Information Technology
1155 Union Circle #310709
Denton, TX 76203 USA
Voice: 940-565-4068
Fax: 940-565-4060

Visit Us:

Sage Hall, Room 338
<http://it.unt.edu/benchmarks/>



Email us:

Have questions on content or technical issues? Please contact us.
unt.uit@unt.edu



UNT System:

- [UNT Home](#)
- [UNT System](#)
- [UNT Dallas](#)
- [UNT Health Science Center](#)

Site last updated on April 22, 2016

[Disclaimer](#) | [AA/EOE/ADA](#) | [Privacy Statement](#) | [Web Accessibility Policy](#) | [State of Texas Online](#) | [Emergency Preparedness](#)

Benchmarks

A green light to greatness.



Columns, April 2013

- Network Connection
- Link of the Month
- Helpdesk FYI
- RSS Matters
- Training
- Staff Activities

[Home](#) » [issues](#) » [2013-04](#) » [Summer Hours](#)

Summer Hours

By [Claudia Lynch](#), *Benchmarks Online Editor*

Summer is almost here! Summer 2013 consists of six sessions and not all campus facilities are open during all the sessions.*

Following are the hours for University Information Technology-managed facilities over the summer. The University is [officially closed](#) on Monday, May 27 (Memorial Day) and Thursday, July 4 (Independence Day).

- The [Helpdesk](#) will be open on Monday, May 27 from 8 a.m. to Midnight, **closed to walk-in traffic**; phone and email only. They will also be open on Thursday, July 4 from 8 a.m. to 5 p.m. but will be **closed to walk-in traffic**; **phone and email only**. They will maintain standard hours and availability for the remainder of the summer.

- [Data Management Services](#) will be **closed** Monday, May 27 and Thursday, July 4, otherwise they will maintain their normal operating hours.

- The **ACUS General Access/Adaptive Lab** ([SYMR 104](#)) will be **closed** Monday, May 27 and Thursday, July 4, otherwise they will maintain the following hours during the summer:

Monday - Saturday: 8 a.m. - 8 p.m.

Sunday: Noon - 8 p.m.



Hours for Other Campus Facilities

General Access Labs

[24 Center](#) (formerly known as WILLIS)



Maintaining a normal schedule through the summer except as noted.

- May 10: **Close** at 7 p.m.
- May 11-12: **Closed**
- May 13-17: 7 a.m. - 7 p.m.
- May 18-19: 11 a.m. - 7 p.m.
- May 20-24: 7 a.m. - 7 p.m.
- May 25-26: 11 a.m. - 7 p.m.
- May 27-31: 7 a.m. - 7 p.m.
- May 28: Open at 7 a.m. and return to 24hr schedule.

		<p>June 1: Closed</p> <p>June 2: Open at 11 a.m. and return to 24hr schedule.</p> <p>July 3: Close at 7 p.m.</p> <p>July 4: Closed</p> <p>July 5: Open at 7 a.m. and return to 24hr schedule.</p> <p>August 9: Close at 7 p.m.</p> <p>August 10-11: Closed</p> <p>August 12-16: 7 a.m. - 7 p.m.</p> <p>August 17-18: Closed</p> <p>August 19-23: 7 a.m. - 7 p.m.</p> <p>August 24-25: Closed</p> <p>August 26-27: 7 a.m. - 7 p.m.</p> <p>August 28: Open at 7 a.m. and return to 24hr schedule.</p>
<p>College of Information General Access Computer Lab (CI-GACLab) (B205)</p> <p>CLOSED: Monday, May 27 (Memorial Day); Thursday, July 4 (Independence Day); August 10-27 (semester break).</p>		<p>May 13 - August 9, 2013:</p> <p>Monday - Friday: 10 a.m. - 6 p.m.</p> <p>Saturday & Sunday: Closed</p>
<p>MUSIC:</p> <p>CLOSED: Monday, May 27 (Memorial Day); Thursday, July 4 (Independence Day); August 10-27 (semester break).</p>	<p>3W1:</p>	<p>Monday - Friday: 9 a.m. - 5 p.m.</p> <p>Saturday: Closed</p> <p>Sunday: Closed</p>
	<p>5W1 & 5W2:</p>	<p>Monday - Thursday: 8 a.m. - 9 p.m.</p> <p>Friday: 8 a.m. - 5 p.m.</p> <p>Saturday: 10 a.m. - 5 p.m.</p> <p>Sunday: 1 p.m. - 8 p.m.</p>
<p>PACS Computing Center (College of Public Affairs and Community Service, Chilton Hall)</p> <p>CLOSED: Monday, May 27 (Memorial Day); Thursday, July 4 (Independence Day); August 10-27 (semester break).</p>		<p>May 13 - August 9, 2013:</p> <p>Monday - Thursday: 8 a.m. - 10 p.m.</p> <p>Friday - Saturday: 8 a.m. - 5 p.m.</p> <p>Sunday: Noon - 10 p.m.</p>
<p>CVAD</p> <p>CLOSED: Monday, May 27 (Memorial Day); Thursday, July 4 (Independence Day); August</p>	<p>3W1:</p>	<p>Monday - Thursday: 8 a.m. - 8 p.m.</p> <p>Friday: 8 a.m. - 5 p.m.</p>

<p>10-27 (semester break).</p>		<p>Saturday - Sunday: Noon - 5 p.m.</p>
	<p>10W:</p>	<p>Monday - Thursday: 8 a.m. - 10 p.m. Friday: 9 a.m. - 5 p.m. Saturday: Noon - 5 p.m. Sunday: Noon - 8 p.m.</p>
<p><u>COE</u> CLOSED: Monday, May 27 (Memorial Day); Thursday, July 4 (Independence Day); August 10-27 (semester break).</p>		<p>May 13 - August 9, 2013: Monday - Thursday: 7 a.m. - 9 p.m. Friday: 7 a.m. - 5 p.m. Saturday: Noon - 8 p.m. Sunday: Closed</p>
<p><u>COB</u> (BLB 190) CLOSED: Monday, May 27 (Memorial Day); Thursday, July 4 (Independence Day); August 10-27 (semester break).</p>		<p>May 13 - June 1: Monday - Saturday: 8 a.m. - 8 p.m. Sunday: 12 p.m. - 8 p.m. Return to normal operating hours beginning Sunday, June 2.</p>
<p><u>CAS</u> - All CAS labs will be closed on May 27 (Memorial Day); June 1 – 2; July 4 (Independence Day); and August 10 – 27.</p>	<p>Lab Hours for May 13 – August 9, excluding closings</p>	
	<p>3W1</p>	<p>GAB 330: Monday - Thursday: 8 a.m. – Midnight Friday: 8 a.m. - 5 p.m. Saturday: Noon - 8 p.m. Sunday: Noon – Midnight GAB 550: Closed Terrill 220: Closed Wooten 120: Monday – Thursday: 8 a.m. – 10 p.m. Friday: 8 a.m. – 5 p.m. Saturday - Sunday: Closed</p>
	<p>5W1 and 5W2</p>	<p>GAB 330: Monday - Thursday: 8 a.m. – Midnight Friday: 8 a.m. - 5 p.m. Saturday: Noon - 8 p.m. Sunday: Noon – Midnight GAB 550: 5W1: Closed (hosting Tech Writing Labs while AUIDB is being renovated)</p>

		<p>5W2: Monday – Friday: 8 a.m. – 5 p.m. Saturday & Sunday: Closed</p> <p>Terrill 220:</p> <p>Monday – Thursday: 8 a.m. – 8 p.m. Friday: 8 a.m. – 5 p.m. Saturday - Sunday: Closed</p> <p>Wooten 120:</p> <p>Monday – Thursday: 8 a.m. – 10 p.m. Friday: 8 a.m. – 5 p.m. Saturday - Sunday: Closed</p>
<p>Engineering General Access Lab (CENGAL, englab@unt.edu, Discovery Park, B129, 891-6733)</p>		<p>Monday – Friday: 9 a.m. - 5 p.m. Saturday - Sunday: Closed</p>

UNT Shuttle Service

Check out the transit [website](#) to keep up with the shuttle schedule throughout the summer. A 2012-2013 calendar is available here: http://www.unt.edu/transit/pdf/2012-2013_calendar.pdf.



*According to the [Registrar's Office](#), the terms this year are:

1. **3W1** (3 week 1) May 13 - May 30, 2013
2. **8W1** (8 week 1) May 14 - July 5, 2013
3. **SUM** (summer) May 13 - August 9, 2013
4. **5W1** (5 week 1) June 3 - July 5, 2013
5. **10W** (10 week) June 3 - August 9, 2013
6. **5W2** (5 week 2) July 8 - August 9, 2013

Remember:



[Get your alerts fast in case of inclement weather](#)

Visit the Emergency Management [website](#)

City of Denton Residents, [sign up](#) for the CodeRED Emergency Notification System



Contact Us:
University Information Technology
 1155 Union Circle #310709
 Denton, TX 76203 USA



Email us:
 Have questions on content or technical issues? Please contact us.
unt.uit@unt.edu



UNT System:

- [UNT Home](#)
- [UNT System](#)

Voice: 940-565-4068
Fax: 940-565-4060

Visit Us:

Sage Hall, Room 338
<http://it.unt.edu/benchmarks/>

- [UNT Dallas](#)
- [UNT Health Science Center](#)

Site last updated on April 22, 2016

[Disclaimer](#) | [AA/EOE/ADA](#) | [Privacy Statement](#) | [Web Accessibility Policy](#) | [State of Texas Online](#) | [Emergency Preparedness](#)

Benchmarks

A green
light to
greatness.



UNT

ABOUT BENCHMARK ONLINE SEARCH ARCHIVE SUBSCRIBE TO BENCHMARKS ONLINE

Columns, April 2013

Network Connection

Link of the Month

Helpdesk FYI

RSS Matters

Training

Staff Activities

[Home](#) » [issues](#) » [2013-04](#) » [ITSS Quarterly Newsletter](#)

ITSS Quarterly Newsletter

By [Claudia Lynch](#), *Benchmarks Online* Editor

Issue 3 (April 2013) of the *ITSS Quarterly Newsletter* is now available. It is comprised of IT-related news relevant to anyone who uses or has an interest in shared services and applications throughout the UNT System and its member institutions. In this issue:

- Recruitment and retention processes being analyzed
- UNT students receive Financial Aid awards early
- IELI implements new enrollment and reporting processes
- Moving a lot of assets
- Upgrade to space management & planning system
- ITSM tool selection update
- Change management process improvements continue
- 5-year network upgrade successfully completed
- Campus wireless upgrade commences
- Lync Enterprise VS considered to replace Verizon contract
- ITSS Strategic Services team increases project management effectiveness
- Project Manager roles and responsibilities explained
- ITSS personal development program

Find issue 3 of the *ITSS Quarterly Newsletter* here: <http://itss.untsystem.edu/itss-quarterly-newsletter/April2013/>



Contact Us:

University Information Technology
1155 Union Circle #310709
Denton, TX 76203 USA
Voice: 940-565-4068
Fax: 940-565-4060

Visit Us:

Sage Hall, Room 338
<http://it.unt.edu/benchmarks/>



Email us:

Have questions on content or technical issues? Please contact us.
unt.uit@unt.edu



UNT System:

- [UNT Home](#)
- [UNT System](#)
- [UNT Dallas](#)
- [UNT Health Science Center](#)

Site last updated on April 22, 2016

[Disclaimer](#) | [AA/EOE/ADA](#) | [Privacy Statement](#) | [Web Accessibility Policy](#) | [State of Texas Online](#) | [Emergency Preparedness](#)

Benchmarks

A green light to greatness.



ABOUT BENCHMARK ONLINE SEARCH ARCHIVE SUBSCRIBE TO BENCHMARKS ONLINE

Columns, April 2013

- Network Connection
- Link of the Month
- Helpdesk FYI
- RSS Matters
- Training
- Staff Activities

[Home](#)

Today's Cartoon



From "Today's Cartoon by Randy Glasbergen", posted with special permission. For many more cartoons, please visit www.glasbergen.com.



Contact Us:

University Information Technology
 1155 Union Circle #310709
 Denton, TX 76203 USA
 Voice: 940-565-4068
 Fax: 940-565-4060

Visit Us:

Sage Hall, Room 338
<http://it.unt.edu/benchmarks/>



Email us:

Have questions on content or technical issues? Please contact us.
unt.uit@unt.edu



UNT System:

- [UNT Home](#)
- [UNT System](#)
- [UNT Dallas](#)
- [UNT Health Science Center](#)

