# CREDIT HOUR PROJECTIONS - PREDICTED V. ACTUAL FOR AY 2007-08
## COLLEGE-WIDE AND BY CAMPUS

| Campus | Auburn Hills | Highland Lakes | Orchard Ridge | Royal Oak | Southfield | College-wide |
|---|---|---|---|---|---|---|
| **Total (predicted) 2007-08** | 139,664.67 | 78,102.56 | 126,818.07 | 95,436.07 | 44,124.95 | 483,525.32 |
| **Total (observed) 2007-08** | 142,010.00 | 80,709.00 | 128,734.00 | 99,728.00 | 44,532.50 | 495,713.50 |
| **difference (predicted - observed)** | (2,345.33) | (2,606.44) | (1,915.93) | (4,291.93) | (407.55) | (12,188.18) |
| **Per cent difference from observed** | **-1.7%** | **-3.2%** | **-1.5%** | **-4.3%** | **-0.9%** | **-2.5%** |
| **method** | **Winter's Multiplicative Season** | **Winter's Multiplicative Season** | **Log Theta** | **Log Theta** | **Vanguard Dampened Trend** | **Winter's Multiplicative Season** |

*note: College-wide prediction is not the sum of the individual campus predictions. A separate test was run including all campuses.

| Auburn Hills | Predicted | Observed | Difference | Per Cent from Observed |
|---|---|---|---|---|
| Summer II 2007 | 5248.7 | 6044.0 | -795.3 | -13.2% |
| Fall 2007 | 59905.8 | 60066.0 | -160.2 | -0.3% |
| Winter 2008 | 56771.6 | 57925.0 | -1153.4 | -2.0% |
| Summer I 2008 | 17738.6 | 17975.0 | -236.4 | -1.3% |
| **Highland Lakes** | **Predicted** | **Observed** | **Difference** | **Per Cent from Observed** |
| Summer II 2007 | 2919.0 | 3460.5 | -541.5 | -15.6% |
| Fall 2007 | 33605.6 | 35378.0 | -1772.4 | -5.0% |
| Winter 2008 | 31680.7 | 32377.0 | -696.3 | -2.2% |
| Summer I 2008 | 9897.2 | 9493.5 | 403.7 | 4.3% |
| **Orchard Ridge** | **Predicted** | **Observed** | **Difference** | **Per Cent from Observed** |
| Summer II 2007 | 6930.4 | 7399.0 | -468.6 | -6.3% |
| Fall 2007 | 53986.1 | 54037.0 | -50.9 | -0.1% |
| Winter 2008 | 48980.9 | 51511.0 | -2530.1 | -4.9% |
| Summer I 2008 | 16920.7 | 15787.0 | 1133.7 | 7.2% |
| **Royal Oak** | **Predicted** | **Observed** | **Difference** | **Per Cent from Observed** |
| Summer II 2007 | 4095.5 | 4182.0 | -86.5 | -2.1% |
| Fall 2007 | 37954.5 | 39704.0 | -1749.5 | -4.4% |
| Winter 2008 | 36491.7 | 38712.0 | -2220.3 | -5.7% |
| Summer I 2008 | 16894.4 | 17130.0 | -235.6 | -1.4% |
| **Southfield** | **Predicted** | **Observed** | **Difference** | **Per Cent from Observed** |
| Summer II 2007 | 1217.4 | 1172.0 | 45.4 | 3.9% |
| Fall 2007 | 18217.2 | 18416.5 | -199.3 | -1.1% |
| Winter 2008 | 17801.2 | 17957.0 | -155.8 | -0.9% |
| Summer I 2008 | 6889.2 | 6987.0 | -97.8 | -1.4% |
| **College-wide** | **Predicted** | **Observed** | **Difference** | **Per Cent from Observed** |
| Summer II 2007 | 21221.8 | 22257.5 | -1035.7 | -4.7% |
| Fall 2007 | 202392.1 | 207601.5 | -5209.4 | -2.5% |
| Winter 2008 | 192812.7 | 198482.0 | -5669.3 | -2.9% |
| Summer I 2008 | 67098.7 | 67372.5 | -273.8 | -0.4% |

## Showers, Nancy C

**From:** Woods, Mark G
**Sent:** Tuesday, August 26, 2008 10:59 AM
**To:** Showers, Nancy C
**Subject:** Projections
**Attachments:** Fall 2008 projections.xlsx

| | Auburn Hills | Highland Lakes | Orchard Ridge | Royal Oak | Southfield |
|---|---|---|---|---|---|
| Fall 2008 | 61166.3 | 34934.9 | 55116.9 | 40701.5 | 19310.4 |
| Winter 2009 | 58562.8 | 32445.6 | 49785.2 | 39257.0 | 18746.7 |
| Summer I 2009 | 18223.9 | 9854.2 | 17018.1 | 18131.5 | 7124.0 |
| Summer II 2009 | 6131.8 | 3354.5 | 7167.4 | 4553.0 | 1301.5 |
| Method | Winter's Multiplicative Season | Winter's Multiplicative Season | Log Theta | Vanguard Dampened Trend | Vanguard Dampened Trend |

It's actually fairly straightforward. According to the user's guide:

"The wizard uses the early parts of your sample data to see how well each available forecasting method predicts the latter portions. It then ranks the available forecasting methods and suggests the best."

So, it takes the first part of the data, then tests it against each of the mathematical models available to see which one best fits the pattern. So, the method above speaks to the mathematical model that best fits the data.

Admittedly, these math models are fairly complicated, and we'd probably need to get a book on time-series analysis to be able to fully explain it. Even then, it might be a mighty task. I would see it as the equivalent to explaining electricity and circuitry to someone versus showing them how to switch on a light. We can try, but I doubt they'll remember it, but even if they don't, the light still works! :)

I apologize for not having more detailed explanation of how the program works, but Vanguard (the company) isn't going to let us see how it's done in order to protect their franchise. There are several math formulas that illustrate what the program looks for in the trends, but it doesn't go into much more detail.

But, as I said, if there are questions, perhaps we can look into ordering some books such as:

**Introduction to Time Series Analysis and Forecasting**

By Robert A. Yaffee, Monnie McGee

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