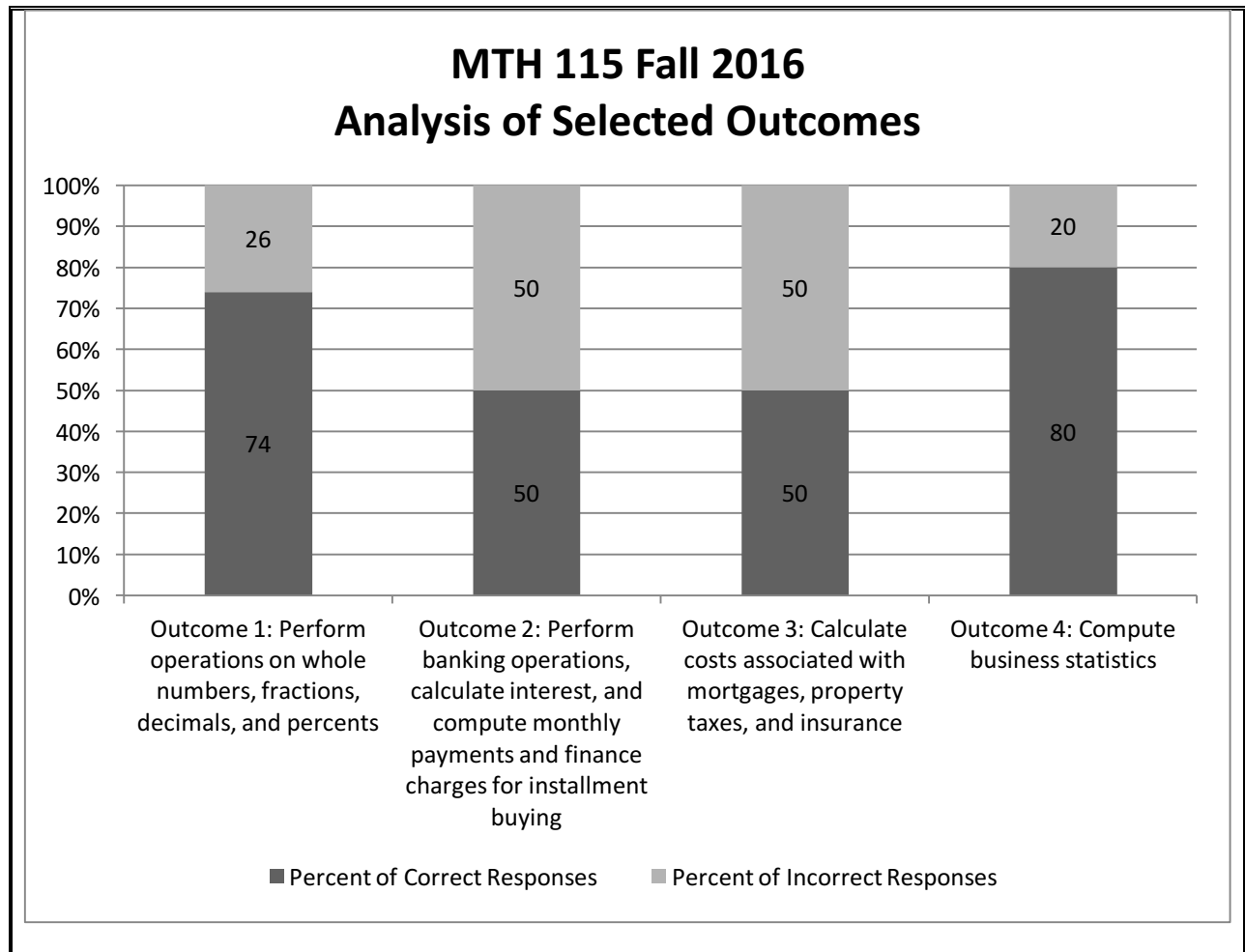**Eastern West Virginia Community and Technical College**
COURSE ASSESSMENT REPORT

Course Title and Number: MTH 115 Business Math	**Academic Term and Year of Assessment Activity (Ex: Fall, 2014)** Fall 2016
Report Submitted By: Andrea Williams	**Number of Students Assessed: 9**
Date Report Submitted: 1/2/2017	**Number of Sections Included:** 1
Course Delivery Format (list all modalities used in sections assessed. Ex: web based, VDL, traditional section, hybrid course, etc.): Traditional section	

Course Role in the Curriculum
Provide a description of the role the course serves in the curriculum (i.e. general education requirement, program technical core, restricted elective, etc.). Note all as appropriate.
MTH 115 Business Math serves as a non-transferable college-level math course for select degrees and certificates and a technical core or restricted elective for several other degrees and certificates.

Assessment Methods
Provide a description of the assessment process used. Include description of instrument and performance standards in description. Note all methods.
Final exam questions are used as a basis for this assessment. The final consisted of 30 short-answer questions graded by the instructor. Students were given partial credit based on the work they showed on their test paper, but for purposes of this analysis, only questions receiving full credit are considered correct. Multiple questions are included in each outcome for analysis. A minimum satisfactory percent of correct responses for each outcome is 75%. Those failing to meet the standard are reviewed on an outcome-by-outcome basis.

Assessment Results
Provide a summary of results including tables/charts. Incorporate information from previous assessments as appropriate. Append additional pages if necessary. If appending, include notation in box to "See attached".
Four outcomes were analyzed, and one out of the four met the 75% correct criterion. More details about the outcomes and the assessed questions are included in the action plan.

MTH 115 Fall 2016
Analysis of Selected Outcomes

Chart data:

Outcome	Percent of Correct Responses	Percent of Incorrect Responses
Outcome 1: Perform operations on whole numbers, fractions, decimals, and percents	74	26
Outcome 2: Perform banking operations, calculate interest, and compute monthly payments and finance charges for installment buying	50	50
Outcome 3: Calculate costs associated with mortgages, property taxes, and insurance	50	50
Outcome 4: Compute business statistics	80	20

■ Percent of Correct Responses   ■ Percent of Incorrect Responses

Course Level Assessment Summary of Outcomes, Indicators and Results
Course Title and Number: MTH 115 – Business Math
Number of students in assessment sample = 9
Number of Sections in Assessment = 1
Add additional rows to table if necessary

Learning Outcomes (Insert learning outcomes assessed during this cycle)	Indicator (Insert indicators used for each outcome: exam question, scoring rubric, etc. Be specific)	Percent of Correct Responses	Percent of Incorrect Responses	Performance Standard Met (75%)* (yes or no)
Outcome 1: Perform operations on whole numbers, fractions,	1. Katy purchased 350 shares of Facebook's IPO @ $22.00 a share. One year later she sold it all for $40 a share. What was her total gain?\n\n2. Cans of soup are stocked in 2,750 sq. ft. of warehouse space. If each can requires 2 1/2 sq.	74%	26%	No

decimals, and percents	ft. of space, how many cans of soup can be stored in this space? 3. Rene Rodrigues vacationed in Mexico and spent 9,200 pesos. What would this be in U.S. dollars? (Round to the nearest cent.) (Use Handbook) 4. The beginning balance of the check register was $492.88. During the month, deposits were made for $210 and $499.88. Checks were written for $18.25, $19.82, and $309.82. Could you calculate the ending balance of the check register? 6. Ann earns $3,900 per month as a gym teacher in California. Her state, local, and federal taxes represent 53% of her monthly gross income. What amount does Ann take home after taxes are deducted from her salary? 7. Dierberg's meat department's annual sales per store were $365,000. Sales for next year are expected to rise by 27%. What are the forecasted sales for the meat department next year?			
Outcome 2: Perform banking operations, calculate interest, and compute monthly payments and finance charges for installment buying	14. Tom borrowed $150,000 for his son Jeff's law school tuition at the University of Mississippi. Tom received a rate of 3.75% for 5 years. What is the maturity value of the loan? 15. Calculate the following: Principal: $55,000 Rate: 6.25% Time: ??? Simple Interest: $5,156.25 16. Ryan deposits $12,000 into a fixed asset account that earns 6% compounded quarterly. What is Ryan's balance at the end of five years? 17. Jackie wants to purchase a lakeside condo in Cuba, Missouri, in 20 years. Jackie will invest in a mutual fund earning 8% compounded semiannually. How much will she need to deposit today in that fund to purchase her $100,000 lakeside condo?	50%	50%	No

	18. Marika Katz bought a $7,000 computer. Based on her income, Marika could afford to pay back only $700 per month. The monthly interest charge on the unpaid balance is 1 1/2%. The U.S. Rule is used in the calculation. Calculate the balance outstanding after the second month. 19. Calculate (A) the average daily balance and (B) the finance charge. 29 Day Billing Cycle <table><tr><td>Nov. 20</td><td>Billing date previous balance</td><td>$1,000</td></tr><tr><td>27</td><td>Payment</td><td>200</td></tr><tr><td>30</td><td>Charge</td><td>150</td></tr><tr><td>Dec. 9</td><td>Payment</td><td>250</td></tr><tr><td>14</td><td>Cash advance</td><td>400</td></tr></table>Finance charge is 2% of average daily balance.			

Outcome 3:
Calculate costs associated with mortgages, property taxes, and insurance
	20. With a home selling price $95,000, a down payment of $20,000, and a mortgage rate of 10% for 30 years, calculate:
	
	   A. Payments per $1,000
	
	   B. Monthly mortgage payment
	
	21. Bill Smoss buys a chalet for $85,000 in the White Mountains of New Hampshire. He puts down $15,000. At the time of closing, he must pay in addition 3 points. Calculate the cost of the points?
	
	22. The budget for Sunset Hills, Missouri, is approximately $72 million. The total assessed value of all property in Sunset Hills is $626 million. What is the tax rate per dollar in Sunset Hills?
	
	23. Calculate the total purchase price:
	
	   Given: retail price $30,000
	   Sales tax 7%
	   Excise tax 10%
		50%	50%	No

Outcome 4: Compute business statistics	24. Calculate the weighted mean of bottled water sales in dollars: <table><tr><td>Value</td><td>Frequency</td><td>Product</td></tr><tr><td>$1.25</td><td>7</td><td>$8.75</td></tr><tr><td>$1.50</td><td>4</td><td>$6.00</td></tr></table>	80%	20%	Yes

$1.75	2	$3.50

25. Calculate the mean of the sales.

	Sales
Reynolds Co.	$18,900
Jiffy Co.	24,800
Ron Co.	16,900
Alice Hardware	29,100

27. Moe's Department Store counted the number of customers entering the store for the week. The results showed 1,150, 1,281, 550, 900, 1,150, 550, and 1,150. What is the mode?

28. Given the following sales of Roe Co., prepare a line graph (run sales to $50,000 in increments of $10,000):

2010 $8,000
2011 $26,000
2012 $48,000

29.

1,000	8,000	4,000	6,000
6,000	2,000	7,000	6,000
9,000	3,000	9,000	5,000
10,000	7,000	10,000	7,000
5,000	6,000	2,000	6,000

Frequency

1,000 =_____ 2,000 =_____
3,000 =_____ 4,000 =_____
5,000 =_____ 6,000 =_____
7,000 =_____ 8,000 =_____
9,000 =_____ 10,000 =_____

Prepare a bar chart.

30. Sales at Regan Real Estate totaled 10 homes for the month. They were as follows: $115,000, $119,000, $150,000, $175,000, $160,000, $104,000, $118,000, $148,000, $165,000, $195,000. Calculate the median.

* Please note if using a different minimum performance standard.

Conclusions
Provide a brief summary of conclusions derived based on analysis of data. Append additional pages if necessary. If appending, include notation in box to "See attached".

The students seem to have a solid understanding of some outcomes while others show room for improvement. These are discussed in detail in the Action Plan below. Low scoring outcomes will be emphasized in upcoming sections of the course and reevaluated on future assessments.

Previous Assessment Reports and Results
Date of Previous Assessment: Fall 2014
List of Outcomes Not Met: Calculate percentages, determine simple interest
Summary of Actions Taken to Address Unmet Learning Outcomes: Append additional pages if necessary. If appending, include notation in box to "See attached".

Note that the Master Course Record has been revised since the previous course assessment. The outcome "determine simple interest" now falls under the broader course-level outcome "perform banking operations, calculate interest, and compute monthly payments and finance charges for installment buying." The two questions on the final exam pertaining to simple interest (14 and 15) each had a 78% correct response rate, an *increase* of 28% from 2014 and above the desired performance standard.

The outcome "calculate percentages" has been absorbed into multiple course-level outcomes, making it impossible to reassess by itself.

Action Plan and Date for Reassessment
Identify action plan for improvement or maintaining current performance levels including outcomes identified for re-assessment, curriculum revision, LOT proposal, new or revised course activities to reinforce learning outcomes, etc. Append additional pages if necessary. If appending, include notation in box to "See attached".

Outcome 1: Perform operations on whole numbers, fractions, decimals, and percents
Discounting minor copying errors and labeling answers with incorrect units raises the percent of correct responses for this outcome to 80%. No changes to curriculum or instruction seem necessary at this time.

Outcome 2: Perform banking operations, calculate interest, and compute monthly payments and finance charges for installment buying
The areas of weakness under this outcome included determining compound interest, determining present value, and calculating the finance charge on a credit card. The first two questions are just a matter of evaluating formulas; a discussion of how to recognize the type of problem and the formula it requires during final exam review should improve these areas. For the credit card problem, the majority of the students knew how to approach the problem but made some errors in the substantial number of calculations it requires to get to the final answer. More homework problems for practice on this type of problem would be beneficial.

Outcome 3: Calculate costs associated with mortgages, property taxes, and insurance
The low percentage for this outcome seems to be due to question wording and knowing the correct answer format rather than understanding the outcome itself. For example, for the monthly mortgage payment question (number 20), most students had the correct answer to (b) but not (a), presumably because they did not understand what was expected for (a). In the future it will be ensured that the question is worded the same way the students see it in the text and on the homework. For the question about calculating the tax rate in decimal (number 22), the majority of students performed the correct

calculation but then went a step too far by converting the decimal to a percent. Reminding the students of the correct form for their answer during final exam review should remedy this problem.

Outcome 4: Compute business statistics
With an 80% correct response rate, no adjustment in instruction is recommended at this time.

This is the first time this course has been assessed since the introduction of MTH 100 as a pre- or co-requisite. Per the MTH 100 Course Assessment from Spring 2016, every student who was co-enrolled in both MTH 100 and MTH 115 passed both courses that semester. However, for Fall 2016, only a third of the co-enrolled students passed both. The students only enrolled in MTH 115, all of whom had either taken developmental courses previously or were not required to take developmental math, boasted a 100% pass rate. Success in MTH 100 as well as MTH 115 will continue to be monitored to determine the effectiveness and the relevance of MTH 100 as a co-requisite.

Proposed date for the next assessment is Fall 2018.

Assessment Committee Recommendation/Approval
(To be posted by Assessment Committee Chair)

Ξ Approved as presented
  Approved with recommendations for future reports (Explanation Required)
  Resubmission Required. Reason for Resubmission:

Date: 02-10-17