Collin County Community College District
APPLICATION FOR SABBATICAL LEAVE

Instructions

Please complete this application by responding to **all** items. Attach requested documentation (in the order requested) and secure the appropriate signatures prior to submitting the application to the chair of the Sabbatical Leave Committee. **Please submit the original and 10 copies.**

Name Clay Randall **CWID** 110774476

Title Economics Professor **Division** Academic Affairs

Have you ever been granted a sabbatical? No **If yes: Dates of Prior Sabbatical(s):** _____

Please provide a brief description of your *previous* sabbatical project:

Sabbatical Leave Period Being Requested

Dates: **Beginning Date** August 2018 **Ending Date** December 2018

Length: [X] One semester [ ] Two semesters [ ] Other _____

ABSTRACT

Please give a summary description of the project and its significance in improving teaching and learning at Collin College. Please use language that can be readily understood by persons in areas of expertise other than your own. **PLEASE DO NOT EXCEED SPACE PROVIDED BELOW.**

You have heard of a "flipped classroom." How about creating a "flipped experience" for our students? From 1984 to 2016 (Collin College was founded in 1985), the Consumer Price Index (CPI) increased 130% while the CPI for Educational Books and Supplies increased 519% with a yearly average increase over the last 10 years of 6% which is almost three times the overall CPI inflation rate growth. Economics textbooks often provide economic data such as the CPI, Gross Domestic Product, Unemployment Rate, and many more economic variables which become outdated before the book is released. This project proposes to involve the student in actively building their own textbook [at this time] called BAMa and BAMi – **B**uild **A** **Ma**croeconomics Workbook and **B**uild **A** **Mi**croeconomics Workbook. The foundation of the book will involve writing the book and obtaining a Creative Commons license and giving students free access to the book on a website and on Canvas. The books will incorporate clichés and video links that will help students have a mental model of some of the most challenging economic terms/concepts. In addition, the Federal Reserve Economic Database (FRED) has a Microsoft Excel Add-In in which students can obtain the most up to date economic data and the Macro workbook will be built which allows students to gather the most current economic data using Excel. One reason that new versions of Economics textbooks are published is to capture the new economic data but the data is available with one click of a button and is free so the marginal cost to acquire and publish the data is practically $0. The BAMa Workbook will consist of 14 chapters and the BAMi Workbook will consist of 15 chapters. In addition, to the two Sabbatical objectives of writing the two Workbooks, a third objective is to create a Student Learning Outcomes (SLO) Report and course improvement plan template which allows a professor to document student completion and successful student completion per course. Flipping the experience where the student co-creates part of a textbook based on their experiences should help student understanding of the SLO's.

Sabbatical Proposal

Who? Clay Randall, Economics Professor **When?** Fall 2018 semester

What? 3 Objectives

Objective 1: Write an open-source (free) ECON2301 Macroeconomics Workbook with the following chapters and 3-minute video vignettes illustrating economics concepts in everyday life –

Chapter	Title	Week	3-minute video vignette
1	Introduction to Economics	1	Circular Flow Model – grocery shopping and working
2	Macro: Math & Graph Review	1	
3	Production Possibilities Frontier*	2	PPF Model – alcohol or cocaine consumption (addiction) versus all other goods/services (note: actual drugs will not be used in the making of the video); cleaning house versus all other goods/services
4	Demand	3	
5	Supply	4	
6	Combining Demand & Supply	5	Shift versus Movement – Physics analogy using a table, Breaking Bad and magnets. Price Ceiling and Price Floor – Physics analogy using gravity
7	Unemployment	6	Producing Tennis Balls – Students "produce" tennis balls
8	Inflation	7	
9	National Income (GDP)*	8	
10	Aggregate Demand & Aggregate Supply	9	3 States of the Economy and Goldilocks and the 3 Bears Analogy
11	Classical School of Economics	10	
12	Keynesian School of Economics	11	
13	Money & Banking	12	
14	Monetary Policy*	13	
	Final Editing of Workbook & Videos	14	
	Final Editing of Workbook & Videos	15	
	Final Editing of Workbook & Videos	16	
	*International Economics coverage		

Objective 2: Write an open-source (free) ECON2302 Microeconomics Workbook with the following chapters and 3-minute video vignettes illustrating economics concepts in everyday life –

Chapter	Title	Week	3-minute video vignette
1	Introduction to Economics	1	Circular Flow Model – grocery shopping and working
2	Micro: Math & Graph Review	1	
3	Production Possibilities Frontier	2	PPF Model – alcohol or cocaine consumption (addiction) versus all other goods/services; cleaning house versus all other goods/services
4	Demand	3	
5	Supply	4	
6	Combining Demand & Supply	5	Shift versus Movement – Physics analogy using a table, Breaking Bad and magnets. Price Ceiling and Price Floor – Physics analogy using gravity
7	Externalities & Public Goods	6	Gone Fishin' – Goldfish and Hershey's Kisses

8	Consumer Choice (Utility)	7	
9	Elasticity	8	
10	Production	9	Producing Tennis Balls – Students "produce" tennis balls
11	Cost, Revenue, & Profit	10	
12	Market Structure: Perfect Competition	11	
13	Market Structure: Monopoly	12	
14	Market Structure: Monopolistic Competition & Oligopoly	13	
15	Resource Markets	14	
	Final Editing of Workbook & Videos	15	
	Final Editing of Workbook & Videos	16	

Objective 3: Create a 1-page Student Learning Outcomes (SLO) Report that a professor can use when a course ends quantifying the percentage of students who completed each Student Learning Outcome and the percentage of students who successfully completed each Student Learning Outcome. In addition, the professor can suggest a course improvement plan if he/she were to teach the course again.

Why? From 1984 to 2016 (Collin College was founded in 1985), the Consumer Price Index (CPI) increased 130% while the CPI for Educational Books and Supplies increased 519% with a yearly average increase over the last 10 years of 6% which is almost three times the overall CPI inflation rate growth. Please see Appendix 2 for CPI and growth rate calculations. Economics textbooks often provide economic data such as the CPI, CPI Inflation Rate, Gross Domestic Product, Unemployment Rate, and many more economic variables which become outdated before the book is released. This project proposes to involve the student in actively building their own textbook including up-to-date economic variables for both macroeconomics and microeconomics [at this time] called BAMa and BAMi – **B**uild **A** **Ma**croeconomics Workbook and **B**uild **A** **Mi**croeconomics Workbook. The foundation of the book will involve writing the book and obtaining a Creative Commons license and giving students free access to the book on a website and on Canvas. Both books will incorporate clichés and video links that will help students have a mental model in mind of the economics term/concept. As you can see from the examples in Appendix 1, the student will be able to bridge economic terms/concepts with how they perceive it at a community service or work experience level, as two examples. Each chapter will contain a section where students may create their own examples as you see in Appendix 1. In short, both the professor and each student can co-create his/her textbook with student examples.

Resources Needed? I have a Microsoft Surface Pro to write the two Workbooks with a target audience of the dual credit student in mind. In the Spring 2018 semester and in preparation to write the Workbooks, I will send to my fellow Economics professors a mapping of the terms/concepts/learning objective for each SLO and ask for their feedback if any terms/concepts need to be added/subtracted/modified. In addition, I will ask them to complete a survey on the top-3 concepts students have difficulty learning in each branch of economics and incorporate explanations in the Workbook or video demonstrations to address the most challenging topics. Please see Appendix 3 as an example of the terms/concepts/learning objectives. During Summer 2018 in my face-to-face Microeconomics courses I will begin recording experiments and demonstrations in which I will need video equipment from Media Services or the Library's Maker Space. While filming these videos and to use in future courses I plan to use the services of Grayson Knight, a Lovejoy dual credit student who related terms/concepts to his t-shirt startup business. He can customize a shirt for less than $20. Please see Appendix 4.

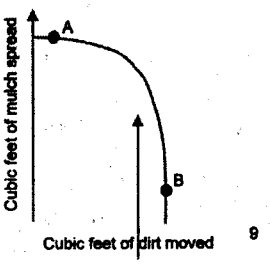
Conclusion: The outcomes of the sabbatical will reduce the price of an economics textbook to $0 while allowing each student the opportunity to co-create part of the textbook. The effectiveness of the textbook should show up in improved Student Learning Outcomes in future semesters which currently are not being reported at an individual professor or Economics department level. However, an Outcomes Report and Course Improvement Plan template will be developed during the Sabbatical which can be used for course improvement.

APPENDIX 1A - Chandler Crews, a Lovejoy High School dual credit student, Fall 2017, related macroeconomics terms and concepts to his Eagle Scout Project at Georgetown Veterans Memorial Cemetery near Pottsboro, TX. **Each chapter will contain a section where each student can create their own "Economics in My Life" or an "Economics is Everywhere" section – see Attachment 1A, 1B, 1C for examples.**

SLO6: Term 1 of 3 - Production Possibilities Frontier (PPF)

Definition - The PPF represents the limits to what a society can produce at a given point in time. The PPF, or curve, is a graph illustrating the combinations of two types of output that can be produced by a society using the available resources and technology. (1)

Application - During the project workers would often dig down topsoil, replace it with nutrient rich topsoil and then put landscaping mulch on top. Workers were able to able to spread mulch quicker than dirt. Showing that productions were not linear, but curved.



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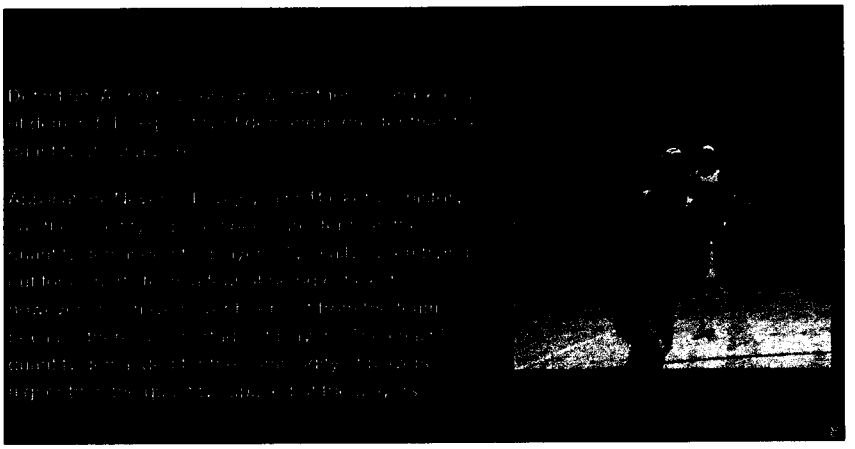
APPENDIX 1B - Tori Hanson, a Lovejoy High School Dual credit student, Fall 2017, related macroeconomics terms and concepts to her position on the Lovejoy High School basketball team.



APPENDIX 1C – Mandy Rickett, a Lovejoy High School Dual credit student, Fall 2017, related macroeconomics terms and concepts to her position as an entertainer at Cherry on Top BalloOns and More. Interestingly, she colors her hair red to get more jobs which insulates her from unemployment in the industry!

SLO3: Term 3 of 3-Structural Unemployment

- Definition: Unemployment due to improvements, technological or entrepreneur-based, to compete with companies in the same market. (3)
- Application: Due to the nature of the market, an entertainer must always be honing their craft in order to compete with other entertainers due to the structural unemployment. Jobs are given on a gig by gig basis, so if a client finds an artist better than you, you lose money because your craft is not as high quality as another entertainer's.

Here is a before and after picture concerning a costume improvement- clients prefer natural hair than cheap, tacky wigs, so this avoids structural unemployment by improving the service.

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APPENDIX 1D - Blair Ji, a Microeconomics student in 2013, applied terms/concepts at her business in Richardson, TX – Jaram's Donuts.

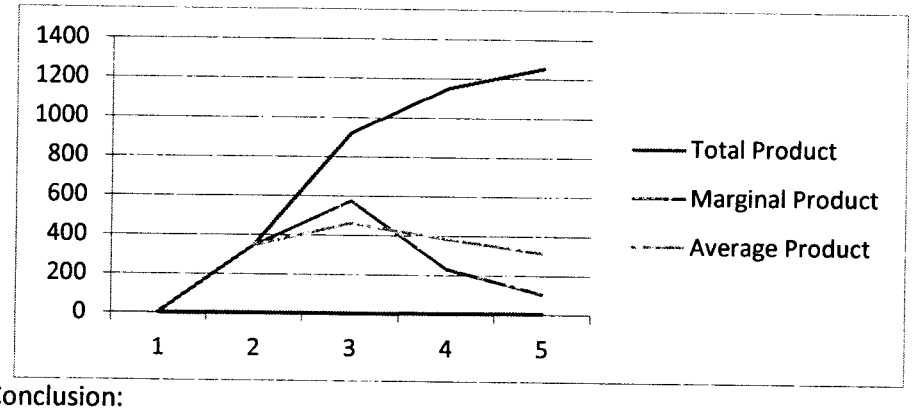
1. Production

a. Short Run period. Fixed Input = Building, gear, facility, etc / Variable Input = # of Labor, the quantity of ingredients, etc

b. Assumption: Steady stream of customers. The workers do not get tired. The workers are only making kolaches during work hour. Ceteris parius

c. Production table of small regular kolaches when 0-3 workers make them in a day.

Size of the Donut Shop (Sq. ft)	Labor (# of Workers(cashiers))	Total Product (# of small regular kolaches)	Marginal Product (ΔTP/ΔLabor)	Average Product (TP/Labor)
1000 sq. ft	0	0	N/A	0
1000 sq. ft	1(me)	346	346	346
1000 sq. ft	2(Mom+me)	923	576	461.5
1000 sq. ft	3(Mom+me+employee)	1154	231	384.67
1000 sq. ft	4 (Mom+me+employee+Dad)	1259	105	314.75



d. Conclusion:

i. Diminishing marginal productivity and diminishing marginal returns set in on worker 3. Due to limits of working space, it is harder for 2nd , 3rd and 4th worker to produce kolaches together. However, we can still use all four workers since all 4 workers are still producing positive returns.

2. Accounting Profit and Economic Profit

a. Total Revenue: approx. $8,000

b. Explicit Cost: $4240

i. Rent: $1640
ii. Electricity: $270
iii. Gas: $20
iv. Water: $30
v. Trash: $50
vi. Milk: $240
vii. ADT(Security): $40
viii. Ingredients: $1950

c. Implicit Cost: $11,000

i. Foregone Salary: $11,000

d. Accounting Profit: TR – Explicit Cost = $8,000 - $4,240 = $3,760

e. Economic Profit: TR – Explicit Cost – Implicit Cost = $8,000-$4,240-$11,000 = $ -7240

APPENDIX 2 - Consumer Price Index (CPI) for Educational Books and Supplies

Date	CPI - Textbooks	CPI-Textbooks Growth Rate	Date	CPI - Textbooks	CPI-Textbooks Growth Rate
6/1/1983	100.0	Base Year CPI=100	12/1/2000	287.1	12%
12/1/1984	112.6	13%	12/1/2001	296.7	3%
12/1/1985	123.1	9%	12/1/2002	324.4	9%
12/1/1986	132.6	8%	12/1/2003	345.2	6%
12/1/1987	142.6	8%	12/1/2004	357.6	4%
12/1/1988	152.5	7%	12/1/2005	375.1	5%
12/1/1989	164.2	8%	12/1/2006	400.2	7%
12/1/1990	174.9	7%	12/1/2007	435.0	9%
12/1/1991	185.0	6%	12/1/2008	465.0	7%
12/1/1992	194.4	5%	12/1/2009	497.0	7%
12/1/1993	201.2	3%	12/1/2010	514.3	3%
12/1/1994	208.3	4%	12/1/2011	540.9	5%
12/1/1995	219.9	6%	12/1/2012	578.4	7%
12/1/1996	231.9	5%	12/1/2013	606.7	5%
12/1/1997	243.5	5%	12/1/2014	633.9	4%
12/1/1998	258.0	6%	12/1/2015	661.4	4%
12/1/1999	257.0	0%	12/1/2016	697.2	5%
1984-1999		128%	2000-2016		143%
			1984-2016		**519%**
Overall CPI Inflation Rate 1984-2016 (12/1984: 105.5; 12/2016: 242.8)					**130%**

Source of CPI data: https://fred.stlouisfed.org/; Retrieved 12/4/2017

APPENDIX 3 – Student Learning Outcome 1 for both Macroeconomics and Microeconomics

SLO 1: Explain the role of scarcity, specialization, opportunity cost and cost/benefit analysis in economic decision-making.

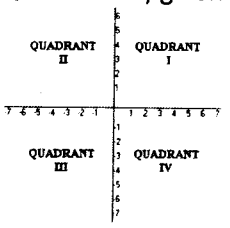
Competencies – the learner is expected to:	Terms/Concepts
1. Define economics.	economics: resources or inputs or factors of production wants
2. Define the four basic types of resources and give examples.	resources: land, labor, capital, entrepreneurship
3. Describe the relationship between scarcity and choice.	scarcity choice
4. Describe why the need to make decisions leads to the experiencing of opportunity cost.	opportunity cost
5. Define and differentiate between the two branches of economics.	macroeconomics microeconomics
6. Define and differentiate between the two types of statements.	positive statement normative statement
7. Define and apply what is meant by marginal analysis and how marginal analysis is used in decision making.	marginal analysis marginal benefit, marginal cost
8. Define and describe positive and negative incentives.	positive incentive negative incentive
9. Define and apply 4 fallacies (errors) in reasoning.	composition fallacy, division fallacy false cause fallacy, loaded terminology
10. Define and describe intended consequences and unintended consequences as they relate to a policy.	intended consequences unintended consequences
11. Define and describe a model and explain the importance of the ceteris paribus assumption.	model ceteris paribus assumption, theory
12. Describe the characteristics of the three types of economic systems.	Economic systems: Command, Market, Mixed
13. Circular Flow Model of the Economy: 13.1 Define a product market and resource market. 13.2 Create a diagram of the simple Circular Flow Model.	Circular Flow Model of the Economy: 2 Markets (2 ballfields) – Product, Resource 2 Entities (2 players) - businesses, households
14. Production Possibilities Frontier (PPF) Model: 14.1 Construct a PPF model when given data and describe the assumptions of the model. 14.2 Illustrate inefficiency, efficiency, and economic growth assuming constant and increasing opportunity cost. 14.3 Explain why constant opportunity costs result in a straight-line PPF while increasing opportunity costs result in a bowed-outward PPF. 14.4 Explain (and show on a graph) the difference between an efficiency gain and economic growth using the PPF model. 14.5 Explain how it is possible for an economy to consume, but not produce, beyond its PPF.	Production Possibilities Frontier (PPF): Straight-line PPF Bowed-outward PPF Law of Constant Opportunity Cost Law of Increasing Opportunity Cost Inefficient Efficient Attainable Unattainable Efficiency gain Economic growth
15. Explain the difference between consumer goods and capital goods.	consumer goods capital goods
16. Explain the difference between absolute advantage and comparative advantage.	absolute advantage comparative advantage
17. Define specialization and describe how specialization (and trade) can lead to more value for an economy.	specialization trade

SLO1 Appendix: Math and Graph Review Learning Objectives

Competencies – the learner is expected to:	Terms/Concepts
1. Explain and illustrate a positive relationship between two variables on a table and in a graph.	positive relationship
2. Explain and illustrate a negative relationship between two variables on a table and in a graph.	negative relationship
3. Identify independent and dependent variables.	independent variable dependent variable
4. Calculate a slope when given 2 data points.	slope
5. Identify the Y-intercept and X-intercept in a table and on a graph.	Y-intercept X-intercept
6. Calculate a growth rate (percentage change) between two data points.	percentage change growth rate
7. Explain and illustrate graphically the difference between a "movement along a curve" and a "shift of a curve."	movement along a curve shift of a curve
8. Understand the difference in calculating and interpreting totals, marginals, and averages (see the next row for an example).	totals marginals averages
8. Application - For example, calculate marginal product and average product given the following data for yards mowed in one day for a business where L is the number of workers hired and TP is the total product or output or the number of lawns mowed in a day. What is the formula for MP and AP? Show your work in each of the 6 cells below. *Hint: MP requires 2 steps before the final answer and AP requires 1 step before the final answer.*	

Workers (L)	Total Product (TP)	Marginal Product (MP) Formula:	Average Product (AP) Formula:
0	0	----------	----------
1	10	= =	=
2	24	= =	=
3	33	= =	=

Note: We will mostly use Quadrant I (sometimes Quadrant IV) given the typical data we will see in economics.



APPENDIX 4 – In order to create additional mental models for students, I plan to utilize the services of Grayson Knight, Lovejoy High School dual credit student, who owns a t-shirt company Coufnsed and will design and sell a t-shirt for less than $20 (November, 2017 prices). The professor can rotate shirts depending on the units covered. For example, during Week 3 when Supply and Demand is covered, one could wear the Supply and Demand t-shirt which shows the graphs and the equilibrium price and quantity. The back of the shirt could show what happens in the market when supply and/or demand shift and the effect on equilibrium price and quantity.

Coufnsed.

By: Grayson Knight

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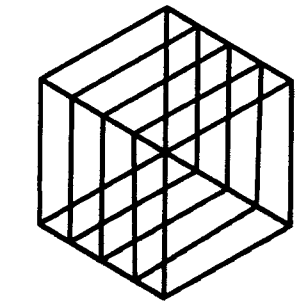

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