

CARISCA Centre for Applied Research
and Innovation in Supply Chain – Africa

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI.

KNUST SCHOOL OF BUSINESS

BSc. Pharmaceutical Supply Chain

PHSC 360

Pharmaceuticals Micro and Macro-economics

Credit: 3

STUDY GUIDE



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INTRODUCTION

Welcome

The Pharmaceuticals Micro and Macro-economics study guide contains the core content for this course. The course focuses on the basic concepts of microeconomics and macroeconomics important to understanding consumer, business, and public policy decision making. The microeconomics part introduces students to the market forces of supply and demand, competition, business organization, and consumer behaviour. The macroeconomics part introduces the students to issues at the national level in such areas as measuring the strength of a nation's economy, international trade, and the appropriate level of government interaction with the economy. The course also equips students with the knowledge necessary to understand matters of economic growth, development, and sustainability and how that affects the pharmaceutical industry.

The content of this course is divided into **8 units**, which are sub-divided into sections. Each unit has about 3-5 sections. To facilitate understanding of the subject matter, the key concept under each section is limited to at most two. In some units, you will be required to review very relevant articles and present them in not more than a page with the objective of facilitating a student-centered learning approach. At the end of some of the units, student will submit a written summary of not more than one page of their learnings for the completed unit, and an electronic self-check questions on the vclass. The written summary, and questions are intended to help the student check whether he/she has understood the concepts in each section. There will be group discussions, and two assignments: individual and group. The written summaries will serve as the individual assignment. The groups discussion will account for 5% of the total grade. The individual and groups assignments will constitute 10% of the total grade of the course. There will also be a mid-semester and end of semester examination which will account for 15% and 70% respectively. Duration for submission of assignment is two weeks from the date of the assignment.

It is my expectation that, this course will make it easier for you to understand the regulatory requirement for the production, supply and utilization of pharmaceuticals. Additional materials on the course will be available on the learning platform, but this study guide should form the basis for your learning.

COURSE OVERVIEW

The pharmaceutical industry provides a valuable contribution to society i.e. households and the government. As an economic entity the industry aims at providing the medicinal needs of residents in the society. Again, the industry aims to contribute to the growth of the economy and also provide jobs. The companies ultimate goal is to make profits and also minimize costs of production. The economic environment in a the country has significnat influence on the missions of the pharmaceutical industry. Microeconomic factors including customers, employees, competitors, shareholders, suppliers and macroeconomic factors like interest rate, inflation, economic growth, and unemployment together influence the choices that pharmaceutical companies make. These choices in turn affect directly the ability of the pharmaceutical company to achieve its mission.

Course Objectives

The main objectives of the course are to:

- Introduce students to the concepts of opportunity cost, trade-offs, and the benefits of exchange
- Equip students with knowledge of the use of supply and demand models to analyse market responses to external events.
- Understand the concepts of gross domestic product, inflation, and unemployment, and how they are measured.
- Understand the laws of supply and demand and equilibrium and its effect on pricing.
- Introduce students to the concept of GDP and its importance for pharmaceutical businesses established in a country.
- Equip students with knowledge of inflation, monetary policy, balance of payments, and real exchange rate for a country's macroeconomic environment.

Intended Learning Outcomes of the Course

By the end of the Pharmaceuticals Micro and Macro-economics course, the student should be able to:

- Discuss the concepts of scarcity, opportunity cost, trade-offs, and the benefits of exchange.
- Use supply and demand models to analyse market responses to external events.
- Analyse the laws of supply and demand and equilibrium and its effect on pricing.
- Measure gross domestic product, inflation, and unemployment.
- Analyse the concept of gross domestic product (GDP) and its importance for pharmaceutical businesses established in a country.

- Analyse inflation, monetary policy, balance of payments, and real exchange rate and the implications in an economy.
- Discuss the macroeconomic environment concept.

Reading Materials

No single textbook will be adequate for the course. The following basic texts have been suggested.

1. Christopher D. P., Jerald E. P., Larry, H. (2013): Economics for Investment Decision Makers: Micro, Macro, and International Economics. 1st Edition. Wiley Press.
2. Chatterjee S. (2014): Introductory Micro and Macro Economics. Partridge India; illustrated edition. 235 – 450.
3. Gregory, N. M. & Mark, P. T. (2017) Economics. Taylor. Fourth edition. Mark P. Taylor 4 ed. Andover, Hampshire: Cengage. 10 - 65
4. William, S. (2019): Economics: An Illustrated Introduction to Microeconomics, Macroeconomics, International Economics, and Behavioral Economics. Kindle Edition. Prentice Hall.

GRADING

Grades in this course will be based on hand-ins as follows:

One individual essay (Term Paper- optional): **10%**

One group assignment: **5%**

Participation in group discussions:

Midsemester examinations: **15%**

End of term Examinations: **70%**

Total: 100%

ACADEMIC/SCIENTIFIC WRITING REQUIREMENT

Students are required to exhibit utmost academic and scientific writing skills in their presentations and assignments. In this course all assignment for individual and group portfolios and particularly the term paper, are supposed to follow all the standards of scientific writing. The term paper (*optional*) gives students the opportunity to explore, in greater detail, one of the topics covered in the course. As indicated earlier in the introduction the paper must have a volume of maximum of 2000 words. Deliverable assignments should be written in Times New Roman, Font size 12, 1.5 spaced with one-inch margins, and with a list of references based on and formatted to the Harvard Style.

ASSIGNMENT SCHEDULE

All assignments are due before the end of the specified day of delivery (GMT 23:59). All assignments are to be uploaded to the hand-in folder for this course unless other instructions are given. If you are unable to hand in your assignment on the LMS of CARISCA KNUST (*vclass*), you may email it to the course facilitator (on the said day of delivery). Failure to deliver assignments on the specified date will attract penalties in the form of a reduced grade.

Assignment (Each Unit has an Assignment)	Description (Assignment title)	Type (Individual/Group)	Deadline (Duration)	Value (of final grade)
1	Discuss the assertion that without scarcity there will be no economics.	Group		5%
2	Explain the factors that affect the demand for paracetamol in Ghana.	Individual		5%
3	Explain why some commodities have high price elasticity and others low price elasticity.	Group		5%
4	Using the expenditure approach discuss how the GDP is measured in a country.	Group		5%
5	Examine the importance of GDP to the pharmaceutical industry in Ghana.	Individual		5%
6	Examine how the exchange rate in Ghana affects the pharmaceutical industry.	Group		5%

7	Examine how microeconomic and macroeconomic environment affect the pharmaceutical industry in Ghana.	Group		5%
8	Discuss the influence of government policies on the efficiency of pharmaceutical companies in Ghana	Group		5%

* Participation in Online discussions may accounts for 15% of final grade

* Deadline could be weekly based

UNIT 1

Introduction to economics theories, concepts of opportunity cost, trade-offs, and the benefits of exchange

OVERVIEW

In this unit, I will explain economics as a science and then discuss the concept of scarcity, choice, opportunity cost as well as trade-offs. Scarcity is the fundamental problem of economics and due to scarcity of resources, economic units or agents that is the household (consumers), the firm (businesses) and government (the state) have to make choices and this process leads to opportunity cost. Pharmaceutical companies face the problem of scarcity and have to make choices. These choices affect the profits of the companies and also the mission of the company. To make better choices, management of the pharmaceutical company will need some knowledge of the basic problems of economics. Unit 1 provides economics theories, scarcity, choice and opportunity cost.

CONTENT

- 1.1 Definition of economics,
- 1.2 The fundamental problems of economics -scarcity, choice and opportunity cost. Trade-offs
- 1.2 Why study economics?
- 1.3 The production possibility frontier
- 1.4 The economic systems

REQUIRED READINGS

1. Christopher D. P., Jerald E. P., Larry, H. (2013): Economics for Investment Decision Makers: Micro, Macro, and International Economics. 1st Edition. Wiley Press.
2. Chatterjee S. (2014): Introductory Micro and Macro Economics. Partridge India; illustrated edition. 235 – 450.
3. Gregory, N. M. & Mark, P. T. (2017) Economics. Taylor. Fourth edition. Mark P. Taylor 4 ed. Andover, Hampshire: Cengage. 10 – 65
4. **Online video links:**
<https://www.youtube.com/watch?v=2izx5W1FAEU>
https://www.youtube.com/watch?v=Al_FyLBQ32k
<https://www.youtube.com/watch?v=IY8Lk2hB0qY>

LEARNING OUTCOMES

By the completion of this unit, student should be able to;

1. Analyse the concept of scarcity, choice and opportunity cost.
2. Calculate opportunity cost.

3. Analyse the production possibility frontier
4. Examine the economic systems.

SESSION/ ACTIVITIES

SESSION 1

- Read about the concepts of scarcity, choice, and opportunity cost,
- Learn about the production possibility frontier (PPF) and why it bows outward.
- Learn about the economic systems.
- Read about economic activities-primary, secondary and tertiary sectors.

Activity 1.1

Visit the online course room and familiarize yourself with the online contents in the course material folder in the LMS for CARISCA KNUST. Here you will find “Unit 1” folder that contains all the assigned readings. In the meantime read the following articles;

1. Matthaei, Julie (1984). Rethinking Scarcity: Neoclassicism, NeoMalthusianism and NeoMarxism, Review of Radical Political Economics, Vol. 16(2/3):81-94
2. Govind Persad, Alan Wertheimer, Ezekiel J Emanuel (2009). Department of Bioethics, Principles for allocation of scarce medical interventions. *Lancet* 2009; 373: 423–31
3. <https://studiousguy.com/the-economic-problem-scarcity-and-choice/>

Activity 1.2

In your groups have online discussions on:

- The concept of scarcity, choice and opportunity cost. Your discussion should highlight on scarcity of economic resources in the pharmaceutical industry.
- the PPF and explain why it bows outward.
- Sectors of production in Ghana-primary, secondary and tertiary sectors.

Activity 1.3 (Tasks/Assignments)

Discuss the assertion that without scarcity there will be no economics. Summarize your discussion and hand in into the folder named "**Hand-in Group Assignment**". This assignment counts towards your participation grade.

UNIT 2

Demand and Supply Laws and equilibrium management

OVERVIEW

Welcome to the second unit of this course. In this unit, the demand function and the demand curve, the supply function and the supply curve will be studied. Pharmaceutical companies must know the factors that influence the demand and supply of pharmaceutical products. The company should be able to analyse factors bring about changes in demand and movements along the demand curve. The law of demand and supply will guide the company in making relevant decisions regarding the type of product to produce, quantity of products to produce and their prices.

CONTENT

- 2.1 The demand function, demand curve and the factors affecting demand
- 2.2 The supply function, supply curve and the factors affecting supply
- 2.3 Changes in demand versus changes in quantity demanded.
- 2.4 Changes in supply and changes in quantity supplied
- 2.5 Market equilibrium analysis

REQUIRED READINGS

1. Christopher D. P., Jerald E. P., Larry, H. (2013): Economics for Investment Decision Makers: Micro, Macro, and International Economics. 1st Edition. Wiley Press.
2. Chatterjee S. (2014): Introductory Micro and Macro Economics. Partridge India; illustrated edition. 235 – 450.
3. Gregory, N. M. & Mark, P. T. (2017) Economics. Taylor. Fourth edition. Mark P. Taylor 4 ed. Andover, Hampshire: Cengage. 10 – 65
4. **Online video links:**
<https://www.youtube.com/watch?v=kIFBaaPJU00>
<https://www.youtube.com/watch?v=gdXoDkCfcM8>

LEARNING OUTCOMES

By the completion of this unit, student should be able to;

1. Examine the factors that affect demand and supply of a commodity.
2. Analyse changes in demand and changes in quantity demanded
3. Analyse changes in supply and changes in quantity supplied.
4. Calculate equilibrium quantity demanded and the equilibrium price.
5. Use graphs to analyse equilibrium price and quantity.

SESSION/ ACTIVITIES

SESSION 2

1. Read about demand and the factors affecting demand for goods and services.
2. Read about supply and the factors affecting supply.
3. Learn about changes in demand and supply
4. Learn about the equilibrium equilibrium price and equilibrium quantity.

Activity 2.1

Visit the online course room and familiarize yourself with the online contents in the course material folder in the LMS for CARISCA KNUST. Here you will find “Unit 2” folder that contains all the assigned readings. In the meantime read the following articles;

1. Abu Bakar, A., Regupathi, A., Aljunid, S.M. *et al.* Factors affecting demand for individual health insurance in Malaysia. *BMC Public Health* **12** (Suppl 2), A10 (2012).
<https://doi.org/10.1186/1471-2458-12-S2-A10>
2. Mathauer, I, Jean-Olivier Schmidt and Wenyaa, M.(2007). Extending social health insurance to the informal sector in Kenya. An assessment of factors affecting demand. *Int J Health Plann Mgmt* 2008; 23: 51–68. Published online 29 November 2007 in Wiley InterScience (www.interscience.wiley.com) DOI: 10.1002/hpm.914
3. <https://www.toppr.com/guides/business-economics/theory-of-demand/meaning-and-determinants-of-demand/>
4. <https://gacbe.ac.in/pdf/ematerial/18BTM25A-U3.pdf>

Activity 2.2

In your groups

- Discuss the factors that affect demand and supply of goods and services with particular reference to pharmaceutical products.
- Analyse equilibrium price and equilibrium quantity using graphs.
- Examine the computation of equilibrium price and equilibrium quantity.

Activity 2.3 (Tasks/Assignments)

Explain the major determinants of demand for paracetamol in Ghana. Hand in into the folder named "*Hand-in Individual Assignment*". This assignment counts towards your participation grade.

UNIT 3

Elasticity of Demand for Pharmaceutical Exports and Imports and Keynesian Multiplier

OVERVIEW

Unit 3 introduces you to the concept of elasticity of demand and supply. Demand and supply can be highly useful in understanding directional changes in prices and quantities that result from shifts in one or the other curve. At a deeper quantitative level, we often need to measure how sensitive quantities demanded or supplied are to changes in the independent variables that affect them. This is the concept of elasticity of demand and supply and plays a crucial role in microeconomics. There are several elasticities of demand, and all elasticities are calculated the same way: they are ratios of percentage changes.

The concept of elasticity of demand is very useful for pharmaceutical companies in several ways. First in the pricing of the products, determination of wages for labour, the incidence of taxes-i.e. if government impose tax the proportion that will be borne by the company and the proportion that will be borne by the consumer or buyer. Whether expansion by the pharmaceutical industry will increase total revenue or reduce it, which products to supply more and make profits, etc.

In this unit we will study elasticity of demand and elasticity of supply. Elasticity of demand is in three forms: Own-price elasticity of demand or price elasticity of demand, income elasticity of demand, and cross-price elasticity of demand or cross elasticity of demand.

CONTENT

- 3.1 The concept and types of elasticity of demand and elasticity of supply.
- 3.2 Computation of own-price, income and cross elasticities of demand.
- 3.3 Determinants of own-price, income and cross elasticities of demand
- 3.4 Applications of elasticity of demand in the pharmaceutical industry.
- 3.5 The Keynesian multiplier

REQUIRED READINGS

- 1.Christopher D. P., Jerald E. P., Larry, H. (2013): Economics for Investment Decision Makers: Micro, Macro, and International Economics. 1st Edition. Wiley Press.
- 2.Chatterjee S. (2014): Introductory Micro and Macro Economics. Partridge India; illustrated edition. 235 – 450.
- 3.Gregory, N. M. & Mark, P. T. (2017) Economics. Taylor. Fourth edition. Mark P. Taylor 4 ed. Andover, Hampshire: Cengage. 10 – 65
4. **Online video links**
<https://www.youtube.com/watch?v=HHcblIxiAAk>
https://www.youtube.com/watch?v=nAT_shQGllk

LEARNING OUTCOMES

By the completion of this unit, students should be able to;

1. Explain the concepts of elasticity of demand and elasticity of supply.
2. Compute own-price, income and cross elasticities of demand
3. Analyse the determinants of own-price, income and cross elasticities of demand
4. Analyse the applications of elasticity of demand in the pharmaceutical industry
5. Derive the Keynesian multiplier
6. Analyse the application of the multiplier in the pharmaceutical industry.

SESSION/ ACTIVITIES

SESSION 3

- Learn about the factors that influence elasticity of demand -price elasticity, income elasticity and cross elasticity.
- Learn about the applications of elasticity of demand in the pharmaceutical industry.
- Read on the Keynesian multiplier and its applications.

Activity 3.1

Visit the online course room and familiarize yourself with the online contents in the course material folder in the LMS for CARISCA KNUST. Here you will find “Unit 3” folder that contains all the assigned readings. In the meantime read the following articles;

1. C.-Y.C. Lin, L. Prince (2013). Gasoline price volatility and the elasticity of demand for gasoline, *Energy Economics* 38 (2013) 111–117
2. Jonathan E. Hughes Christopher R. Knittel Daniel Sperling (2006). Evidence of a Shift in the Short-Run Price Elasticity of Gasoline, *NBER Working Paper Series*
3. <https://businessjargons.com/determinants-of-elasticity-of-demand.html>

Activity 3.2

In your groups

- Discuss why some pharmaceutical products have high price elasticity and others low price elasticity
- discuss the computation and application of the own price elasticity of demand, income elasticity of demand and cross elasticity of demand. Your discussion should highlight on the application of elasticity of demand in the pharmaceutical industry. .
- Derive and discuss the Keynesian Multiplier.

Activity 3.3 (Tasks/Assignments)

Explain why some commodities have high price elasticity and others low price elasticity. .
Summarize your discussion and hand in your assignment into the folder named "***Hand-in Group Assignment***". *This assignment only counts towards your participation grade.*

Measurement of Gross Domestic Product, Inflation, and Unemployment

OVERVIEW

In this unit we will study gross domestic product (GDP). GDP measures, the market value of all final goods and services produced within the economy in a given period of time (output definition) or, equivalently, the aggregate income earned by all households, all companies, and the government within the economy in a given period of time (income definition).

Some textbooks and countries measure flows of income and output by using gross national product (GNP) rather than GDP). GDP represents the broadest measure of the value of economic activity occurring within a country during a given period of time. Knowing the flow of income and output in the pharmaceutical industry will enable policy maker appreciate the importance of the industry in terms of income generation and job creation.

It is the most frequently used indicator of market activity and the change in GDP over time is the principal indicator of economic growth. GDP lies at the top of the entire System of National Accounts, and its methodology is rigorously defined and standardised, enabling international comparison and aggregation. GDP has often been regarded as a proxy indicator of human development and well-being. GDP can influence the decisions made in the pharmaceutical industry.

CONTENT

- 4.1 Definition of gross domestic product, measurement and associated problems.
- 4.2 Construction of the price indexes-Lapeyrs and Paasche
- 4.3 Calculating the consumer price index (CPI), GDP deflator and computing the inflation rate
- 4.4 Measurement of unemployment, types and causes.
- 4.5 Costs of unemployment to the individual and also to society.

REQUIRED READINGS

1. Christopher D. P., Jerald E. P., Larry, H. (2013): Economics for Investment Decision Makers: Micro, Macro, and International Economics. 1st Edition. Wiley Press.
2. Chatterjee S. (2014): Introductory Micro and Macro Economics. Partridge India; illustrated edition. 235 – 450.
3. Gregory, N. M. & Mark, P. T. (2017) Economics. Taylor. Fourth edition. Mark P. Taylor 4 ed. Andover, Hampshire: Cengage. 10 – 65
4. [Online video links](#)

<https://www.youtube.com/watch?v=VQfzGbhWXRA>
<https://www.youtube.com/watch?v=4TgwRYrddPw>
<https://www.youtube.com/watch?v=tw65Wro6D1s>

LEARNING OUTCOMES

By the completion of this unit, student should be able to;

1. Measure GDP and discuss the problems associate with the measurement.
2. Dinstinguish between nominal GDP and real GDP.
3. Calculate the consumer price index, GDP delator and inflation.
4. Measure unemployment.
5. Examine the causes of unemploment.
6. Examine the costs of unemployment to the individual and society.

SESSION/ ACTIVITIES

SESSION 4

- Learn about GDP, inflation and unemployment and their measurement.
- Read on nominal GDP and real GDP.
- Learn about how the consumer price index is computed.
- Read about the costs of unemployment to the individual and society.

Activity 4.1

Visit the online course room and familiarize yourself with the online contents in the course material folder in the LMS for CARISCA KNUST. Here you will find “Unit 4” folder that contains all the assigned readings. In the meantime read the following articles;

- 1.Sharma, Rajiv, et al. “Measurement of GDP of Services Sector in the New Series of National Accounts Statistics.” *Economic and Political Weekly*, vol. 42, no. 37, 2007, pp. 3727–31. *JSTOR*, <http://www.jstor.org/stable/40276388>. Accessed 27 Aug. 2022.
- 2.A Hoshino, M. (2011). Measurement of GDP per capita and regional disparities in China, 1979-2009. *Research Institute for Economics and Business Administration, Kobe University Discussion Paper Series*. Retrieved from <http://www.rieb.kobe-u.ac.jp/academic/ra/dp/English/DP2011-17.pdf>.
3. Hoshino, M. (2011). Measurement of GDP per capita and regional disparities in China, 1979-2009. *Research Institute for Economics and Business Administration, Kobe University Discussion Paper Series*. Retrieved from <http://www.rieb.kobe-u.ac.jp/academic/ra/dp/English/DP2011-17.pdf>.

4. Eliyathamby A. Selvanathan & Saroja Selvanathan (2006) Measurement of Inflation: An Alternative Approach, *Journal of Applied Economics*, 9:2, 403-418, DOI: 10.1080/15140326.2006.12040654 To link to this article: <https://doi.org/10.1080/15140326.2006.12040654>.

5. Khan, R. E. A., & Gill, A. R. (2010). Determinants of inflation: A case of Pakistan (1970-2007). *Journal of economics*, 1(1), 45-51.

6. <https://open.lib.umn.edu/macroeconomics/chapter/5-3-unemployment/>

Activity 4.2

In your groups:

- discuss the measurement of GDP, inflation and unemployment.
- Discuss the calculation of price index and inflation.
- Discuss the causes of unemployment with particular reference to the pharmaceutical industry.

Activity 4.3 (Tasks/Assignments)

Using the expenditure approach measure the GDP in a country. . Summarize your discussion and hand in into the folder named "**Hand-in Group Assignment**". This assignment only counts towards your participation grade.

UNIT 5

Concepts of GDP and its importance for pharmaceutical business

OVERVIEW

GDP measures the aggregate income earned by all households, all companies, and the government within the economy in a given period of time. Unit 5 introduces the student to the concepts of GDP. GDP may be measured using the income approach or the expenditure approach. It is used to judge whether an economy is doing well or poorly.

Higher national income equates to an increased ability to acquire more goods and services, which in turn means increased well-being. Indeed, the standard of living is defined as the amount of goods and services that can be purchased by the population of a country. By this definition, those with higher incomes enjoy higher standards of living i.e. better housing, better healthcare, more frequent and luxurious holidays and so on. The same logic can be applied to a nation's overall economic well-being.

Economists and politicians use GDP as a measure of the health and wealth of an economy are not perceived in the same way by the citizens of a country. The wealth and health of a country have significant influence on pharmaceutical companies.

CONTENT

- 5.1 The concepts of GDP- GDP and GNP, Nominal Income and Real Income.
- 5.2 The circular flow of income.
- 5.3 The components of GDP.
- 5.4 Limitations of GDP as a Measure of Well-Being.
- 5.5 Purposes of estimating the GDP.

REQUIRED READINGS

1. Christopher D. P., Jerald E. P., Larry, H. (2013): Economics for Investment Decision Makers: Micro, Macro, and International Economics. 1st Edition. Wiley Press.
2. Chatterjee S. (2014): Introductory Micro and Macro Economics. Partridge India; illustrated edition. 235 – 450.
3. Gregory, N. M. & Mark, P. T. (2017) Economics. Taylor. Fourth edition. Mark P. Taylor 4 ed. Andover, Hampshire: Cengage. 10 – 65
4. **Online video links**
<https://www.youtube.com/watch?v=SurQ6l3WOsg>
<https://www.youtube.com/watch?v=wKlvjLCTi6M>
<https://www.youtube.com/watch?v=QJ98Xpl2fms>

LEARNING OUTCOMES

By the completion of this unit, student should be able to;

1. Explain the concepts GDP, e.g. GDP at market prices, GDP at factor cost.

2. Examine the circular flow of income.
3. Analyze the components of GDP
4. Examine the limitations of GDP
5. Discuss the importance of GDP concepts to the pharmaceutical industry.

SESSION/ ACTIVITIES

SESSION 5

- Read about the concepts of GDP, gross national product (GNP), net national product (NNP) etc .
- Learn about the circular flow of income.
- Learn about the importance of GDP to the pharmaceutical industry.

Activity 5.1

Visit the online course room and familiarize yourself with the online contents in the course material folder in the LMS for CARISCA KNUST. Here you will find “Unit 5” folder that contains all the assigned readings. In the meantime read the following articles;

1. Muazzam, S., & Nasrullah, M. (2011). Macro determinants of cause-specific injury mortality in the OECD countries: an exploration of the importance of GDP and unemployment. *Journal of community health*, 36(4), 574-582.
2. <https://www.stlouisfed.org/open-vault/2019/march/what-is-gdp-why-important>
3. <https://online.hbs.edu/blog/post/why-is-gdp-important>

Activity 5.2

In your groups

- discuss GDP at market prices, GDP at factor cost, gross national product (GNP), net national product (NNP) the circular flow of income, the components of GDP and their importance to the pharmaceutical industry.
- Discuss the importance of the GDP to the pharmaceutical industry.

Activity 5.3 (Tasks/Assignments)

Based on your discussion examine the importance of GDP to the pharmaceutical industry in Ghana. Hand in the assignment into the folder named "*Hand-in Individual Assignment*". This assignment only counts towards your participation grade

UNIT 6

Concepts of inflation, monetary policy, balance of payments, and real exchange rate.

OVERVIEW

Unit 6 is about inflation, monetary policy, balance of payments, and real exchange rate. Under inflation; demand pull inflation, cost push inflation and their causes will be studied. This unit will also expose the student to the effects of inflation, both favourable and adverse effects. The concept of monetary policy will also be studied in this unit. The objectives of monetary policy i.e. high employment and output stability, economic growth, stability of financial markets, interest rate stability and stability in foreign exchange markets will be discussed. The instruments of monetary policy (open market operations, discount/bank rate, the required reserves, selective controls and moral suasion) will be discussed.

The balance of payments and the concept of exchange rates-real and nominal exchange rate will also be studied. All these concepts have direct significant influence on the pharmaceutical industry.

CONTENT

- 6.1 Definition, types and effects of Inflation
- 6.2 Monetary policy -objectives and instruments
- 6.3 The balance of payments and its components.
- 6.4 The exchange rate-nominal and real exchange rates
- 6.5 Purchasing power parity and its limitations

REQUIRED READINGS

1. Christopher D. P., Jerald E. P., Larry, H. (2013): Economics for Investment Decision Makers: Micro, Macro, and International Economics. 1st Edition. Wiley Press.
2. Chatterjee S. (2014): Introductory Micro and Macro Economics. Partridge India; illustrated edition. 235 – 450.
3. Gregory, N. M. & Mark, P. T. (2017) Economics. Taylor. Fourth edition. Mark P. Taylor 4 ed. Andover, Hampshire: Cengage. 10 – 65
4. **Online video links**
<https://www.youtube.com/watch?v=q8LwZkid740>
<https://www.youtube.com/watch?v=-7ZSav8xvMU>
<https://www.youtube.com/watch?v=kTxub-NBILU>
<https://www.youtube.com/watch?v=uBaTPugw3M4>
<https://www.youtube.com/watch?v=gUGxGCW-k7o>
<https://www.youtube.com/watch?v=g8dSoxmoBsg>
<https://www.youtube.com/watch?v=6MKdp6y3h7c>

LEARNING OUTCOMES

By the completion of this unit, the student should be able to;

1. Analyse the effects of inflation in an economy.
2. Discuss the objectives of monetary policy.

3. Examine the instruments of monetary policy.
4. Discuss the components of balance of payments.
5. Distingusih between nominal exchange rat and real exchange rate.

SESSION/ ACTIVITIES

SESSION 6

- Learn about the types of inflation and the effects of inflation.
- Read about monetary policy, the objectives and the instruments.
- Read about the balance of payments and its components.
- Read about the exchange rate-nominal and real.

Activity 6.1

Visit the online course room and familiarize yourself with the online contents in the course material folder in the LMS for CARISCA KNUST. Here you will find “Unit 6” folder that contains all the assigned readings. In the meantime read the following articles;

1. Kemp, D. S. (1975). Balance-of-Payments Concepts—What Do They Really Mean?. *Federal ReserveBank of St. Louis Review*, July, 14-23.
2. Ahmad, Nawaz and Raheem, Ahmed and Khoso, Imamuddin and Palwishah, Rana and Raza, Unaib, Impact of Exchange Rate on Balance of Payment: An Investigation from Pakistan (July 5, 2014). *Research Journal of Finance and Accounting*, Vol. 5, No.13, 2014, ISSN: 2222-1697, Available at SSRN: <https://ssrn.com/abstract=2475552>.
3. Odedokun, M. O. (1997). An empirical analysis on the determinants of the real exchange rate in African countries. *Journal of International Trade & Economic Development*, 6(1), 63-82.
4. <https://www.investopedia.com/ask/answers/111314/what-causes-inflation-and-does-anyone-gain-it.asp>
5. <https://www.imf.org/external/Pubs/FT/fandd/basics/42-real-exchange-rates.htm>

Activity 6.2

In your groups have online discussion on:

- the effects of inflation in an economy. Highlight on how it affects the pharmaceutical industry.
- the objectives and instruments of monetary policy and how they impact on the pharmaceutical industry.

- the exchange rate and how it affects the pharmaceutical industry.

Activity 6.3 (Tasks/Assignments)

Examine how the exchange rate in Ghana affects the pharmaceutical industry. . Summarize your discussion and hand in into the folder named "*Hand-in Group Assignment*". *This assignment only counts towards your participation grade.*

UNIT 7

Pharmaceutical micro and macroeconomic environment

OVERVIEW

The pharmaceutical industry is considered a key and substantial industry in the world that guarantees one of the most important factors of development. Understanding the core

microeconomic and macroeconomic factors affecting the industry helps in planning and preparation, as well as long-term business strategy development.

Unit 7 is about the economic environment and it is classified into two parts- microeconomic environment and macroeconomic environment. The microeconomic environment relates to markets and decision making of individual economic units including consumers and businesses. Macroeconomics is the study of broad aggregates such as employment and national income. The study of economy-wide phenomena, including inflation, unemployment and economic growth.

Microeconomics and macroeconomics are closely interconnected since changes in the overall economy arise from the decisions of millions of individuals. It is impossible to understand macroeconomic developments without considering the associated microeconomic decisions. Despite the link between microeconomics and macroeconomics, the two fields are distinct. Because microeconomics and macroeconomics address different questions, they sometimes take quite different approaches and are often taught in separate courses.

CONTENT

- 7.1 Microeconomic environment and macroeconomic environment.
- 7.2 Aggregate demand, Aggregate Supply and Economic Fluctuations.
- 7.3 The components of aggregate demand (AD) and AS .
- 7.4 Shifts in AD and AS and its implications in the economy.
- 7.5 Factors that cause shifts in the AD curve.

REQUIRED READINGS

1. Christopher D. P., Jerald E. P., Larry, H. (2013): Economics for Investment Decision Makers: Micro, Macro, and International Economics. 1st Edition. Wiley Press.
2. Chatterjee S. (2014): Introductory Micro and Macro Economics. Partridge India; illustrated edition. 235 – 450.
3. Gregory, N. M. & Mark, P. T. (2017) Economics. Taylor. Fourth edition. Mark P. Taylor 4 ed. Andover, Hampshire: Cengage. 10 – 65
4. Online video links
<https://www.youtube.com/watch?v=hv5ulAkan10>
<https://www.youtube.com/watch?v=ENvweqGVU7k>
<https://www.youtube.com/watch?v=LIRbWUK-EII>

LEARNING OUTCOMES

By the completion of this unit, students should be able to;

1. discuss microeconomic environment and macroeconomic environment

2. Understand the concepts of AD and AS.
3. Analyse the components of AD and AS.
4. Use graphs to examine the shifts in AD and AS curves.
5. Discuss the factors that cause shifts in the AD and AS curves.

SESSION/ ACTIVITIES

SESSION 7

- Read about microeconomic environment and macroeconomic environment.
- Learn about AD and AS.
- Read about the factors that cause shifts in the AD and AS curves.

Activity 7.1

Visit the online course room and familiarize yourself with the online contents in the course material folder in the LMS for CARISCA KNUST. Here you will find “Unit 7” folder that contains all the assigned readings. In the meantime read the following articles;

1. Kotsopoulos, N., & Connolly, M. P. (2014). Is the gap between micro-and macroeconomic assessments in health care well understood? The case of vaccination and potential remedies. *Journal of Market Access & Health Policy*, 2(1), 23897
2. E. Eyo, E. O. (2008). Macroeconomic environment and agricultural sector growth in Nigeria. *World Journal of Agricultural Sciences*, 4(6), 781-786

Activity 7.2

In your groups:

- discuss the microeconomic and macroeconomic environment affecting the pharmaceutical industry.
- Examine shifts in the AD and AS curves.

Activity 7.3 (Tasks/Assignments)

Discuss how the microeconomic and macroeconomic environment affect the pharmaceutical industry in Ghana. Summarize the discussion and hand in into the folder named "***Hand-in Group Assignment***". This assignment only counts towards your participation grade

UNIT 8

Market efficiency and government policy

OVERVIEW

Adam Smith's theory of the invisible hand suggests that millions of independent decision-makers, both consumers and producers, all go about their businesses. These market forces lead to a degree of consistency between these decisions. Thus, in theory, laissez-faire or free market economies

will not tend to have instances where there are vast shortages and surpluses for long periods of time, because there will be incentives for producers and consumers to change their behaviour, which moves the market to equilibrium, thus efficiency is achieved. Indeed, government policy can influence the decisions of both consumers and producers and hence efficiency.

This analysis forms the basis of what is called general equilibrium. General equilibrium is the notion that the decisions and choices of economic agents are coordinated across markets. It is the idea that the market mechanism leads to outcomes that are efficient. Thus, consumers are maximizing utility and producers are maximizing profits and producing at minimum average cost.

This unit will examine the consumer and producer surplus at equilibrium and add these together to get a measure of the total surplus. Economic theory suggests that consumer surplus is a measure of the consumer's well-being and producer surplus is a measure of the producer's or seller's well-being, hence total surplus can be used as a measure of society's economic well-being and indicator of the efficiency of the market. Government policy can have significant influence on market efficiency.

CONTENT

- 8.1 The consumer and producer surplus.
- 8.2 Concept of market efficiency.
- 8.3 Pareto efficiency
- 8.4 Government intervention in the market.
- 8.5 Market efficiency and government policy

REQUIRED READINGS

1. Gregory, N. M. & Mark, P. T. (2017) Economics. Taylor. Fourth edition. Mark P. Taylor ed. Andover, Hampshire: Cengage. 10 – 65
2. Productivity Commission 2013 *On efficiency and effectiveness: some definitions*, Staff Research Note, Canberra. Available at www.pc.gov.au. LINK <https://www.pc.gov.au/research/supporting/efficiency-effectiveness/efficiency-effectiveness.pdf>
3. **Online video links**
<https://www.youtube.com/watch?v=r1Xq9FcxDB8>
<https://www.youtube.com/watch?v=CtCfwMmzOBU>
<https://www.youtube.com/watch?v=jBz2cAGzaDM>
<https://www.youtube.com/watch?v=RxuXVuXhaTU>
<https://www.youtube.com/watch?v=kJzfKuiBK50>
https://www.youtube.com/watch?v=6_17ZgVJl6I

LEARNING OUTCOMES

By the completion of this unit, student should be able to:

1. Analyse consumer and producer surplus.
2. Understand the concept of efficiency and Pareto efficiency.
3. Examine economic efficiency, productive efficiency and allocative efficiency
4. Analyse the effect of government intervention or price controls in the market.

SESSION/ ACTIVITIES

SESSION 8

- Read about consumer and producer surplus.
- Learn about the concept of economic efficiency and Pareto efficiency.
- Read about efficiency and government policy

Activity 8.1

Visit the online course room and familiarize yourself with the online contents in the course material folder in the LMS for CARISCA KNUST. Here you will find “Unit 8” folder that contains all the assigned readings. In the meantime read the following articles;

1. *Economic Efficiency and Profitability*. Article in Studia Universitatis „Vasile Goldis” Arad – Economics Series, January 2011. Uploaded on 07 April 2016 by Marinela Geamănu, Spiru Haret University, Faculty of Finances and Banking, Bucharest. LINK
https://www.researchgate.net/publication/265814327_ECONOMIC_EFFICIENCY_AND_PROFITABILITY

2. I.P.L. Png and C.W.J. Cheng, CH. 6-Economic Efficiency-LINK
https://www.comp.nus.edu.sg/~ipng/mecon/sg/06effy_sg.pdf

Activity 8.2

In your groups

- Discuss the concept of efficiency.
- Discuss the effect of government policy on market efficiency of pharmaceutical products in Ghana.

Activity 8.3 (Tasks/Assignments)

Discuss the influence of government policies on the efficiency of pharmaceutical companies in Ghana. Summarize your discussion and hand in your assignment into the folder named "*Hand-in Group Assignment*". This assignment only counts towards your participation grade.

FURTHER VIDEO LINKS

MICROECONOMICS

MICROECONOMICS (GENERAL)

<https://www.youtube.com/watch?v=1UxA6JzoT-4>

https://www.youtube.com/watch?v=Al_FyLBQ32k

BASIC CONCEPT IN ECONOMICS

<https://www.youtube.com/watch?v=2izx5W1FAEU>

<https://www.youtube.com/watch?v=lY8Lk2hB0qY>

<https://www.youtube.com/watch?v=DQq-zJPSf4U>

<https://www.youtube.com/watch?v=RvExK58hX5Y>

<https://www.youtube.com/watch?v=gynIFMfQILA>

DEMAND AND SUPPLY

<https://www.youtube.com/watch?v=kIFBaaPJU00>

<https://www.youtube.com/watch?v=ewPNuglqCUM>

<https://www.youtube.com/watch?v=K0AQ9rK8MN4>

<https://www.youtube.com/watch?v=gdXoDkCfcM8>

<https://www.youtube.com/watch?v=-hbVW2OTJ4Q>

<https://www.youtube.com/watch?v=Sp3gJS8NyAc>

<https://www.youtube.com/watch?v=B6BDp6cigHg>

<https://www.youtube.com/watch?v=1w3fl41LuRY>

<https://www.youtube.com/watch?v=wMruK1xhvYM>

<https://www.youtube.com/watch?v=dvlaZDJJBQo>

<https://www.youtube.com/watch?v=9jLIOPqHxLs>

<https://www.youtube.com/watch?v=UpywG6fMuEQ>

<https://www.youtube.com/watch?v=6u6o8ewOeiE>

<https://www.youtube.com/watch?v=-kJWQI16WWA>

ELASTICITY

<https://www.youtube.com/watch?v=HHcblIxiAAk>

https://www.youtube.com/watch?v=nAT_shQGllk

<https://www.youtube.com/watch?v=FBWJYH8DZ1g>

<https://www.youtube.com/watch?v=HHcblIxiAAk&t=87s>

<https://www.youtube.com/watch?v=io4GwFGiVcl>

<https://www.youtube.com/watch?v=daMaYGpW58c>

<https://www.youtube.com/watch?v=CMkUz1MsXlc>

<https://www.youtube.com/watch?v=MxOMijf4n1w>

<https://www.youtube.com/watch?v=eygdmSjGwEc>

<https://www.youtube.com/watch?v=Ngv0Be9NxAw>

<https://www.youtube.com/watch?v= QmFZdlPb8U>

.....elasticity of supply....

<https://www.youtube.com/watch?v=ICjglEvPL44>

<https://www.youtube.com/watch?v=wi1x3sYHU6I>

https://www.youtube.com/watch?v=nAT_shQGllk&t=166s

https://www.youtube.com/watch?v=NyV_SHgA4Dc

<https://www.youtube.com/watch?v=N-k8509h9bc>

<https://www.youtube.com/watch?v=MRErv9tO51M>

<https://www.youtube.com/watch?v=ggulcyQzSog>

<https://www.youtube.com/watch?v=sSeByVLztJg>

<https://www.youtube.com/watch?v=H8VLO6as7pc>

<https://www.youtube.com/watch?v=7q8bcbbzXU0>

<https://www.youtube.com/watch?v=eygdmSjGwEc&t=40s>

MACROECONOMICS

GENERAL/INTRODUCTION

<https://www.youtube.com/watch?v=PCtw1bxu8Y>

<https://www.youtube.com/watch?v=4rY-nmvXeKw>

AGGREGATE DEMAND

<https://www.youtube.com/watch?v=ENvweqGVU7k>

AGGREGATE SUPPLY

<https://www.youtube.com/watch?v=hv5ulAkAn10>

AGGREGATE DEMAND AND AGGREGATE SUPPLY

<https://www.youtube.com/watch?v=LIRbWUK-EII>

CIRCULAR FLOW OF INCOME MODEL

<https://www.youtube.com/watch?v=SurQ6l3WOsg>

CONSUMER AND PRODUCER SURPLUS

<https://www.youtube.com/watch?v=r1Xq9FcxDB8>

<https://www.youtube.com/watch?v=CtCfwMmzOBU>

<https://www.youtube.com/watch?v=jBz2cAGzaDM>

<https://www.youtube.com/watch?v=RxuXVuXhaTU>

<https://www.youtube.com/watch?v=n0LXkA9kato>

MARKET EFFICIENCY

<https://www.youtube.com/watch?v=kJzfKuiBK50>

https://www.youtube.com/watch?v=6_17ZgVJl6I

GROSS DOMESTIC PRODUCT (NATIONAL INCOME AND HOW IT IS MEASURED)

<https://www.youtube.com/watch?v=VQfzGbhWXRA>

<https://www.youtube.com/watch?v=QJ98Xpl2fms>

<https://www.youtube.com/watch?v=wKlvjLCTi6M>

INFLATION

<https://www.youtube.com/watch?v=q8LwZkid740>

<https://www.youtube.com/watch?v=4TgwRYrddPw>

<https://www.youtube.com/watch?v=R8VBRCs2jTU>

<https://www.khanacademy.org/economics-finance-domain/core-finance/inflation-tutorial/inflation-basics-tutorial/v/what-is-inflation>

<https://www.youtube.com/watch?v=UMAELCrJxt0>

UNEMPLOYMENT AND BUSINESS CYCLE

<https://www.youtube.com/watch?v=tw65Wro6D1s>

<https://www.youtube.com/watch?v=DuthBdJDus4>

<https://www.youtube.com/watch?v=pyDAfdG7ugs>

https://www.youtube.com/watch?v=Y5jr_zv2Y9M

<https://www.youtube.com/watch?v=pyDAfdG7ugs>

<https://www.youtube.com/watch?v=-1cfJPEYkkk>

<https://www.youtube.com/watch?v=-1cfJPEYkkk>

EXCHANGE RATE / INTERNATIONAL ECONOMICS

<https://www.khanacademy.org/economics-finance-domain/ap-macroeconomics/ap-open-economy-international-trade-and-finance/exchange-rates/v/exchange-rate-primer-ap-macroeconomics-khan-academy>

<https://www.youtube.com/watch?v=-7ZSav8xvMU>

https://www.youtube.com/watch?v=_pL_5trI6YY

<https://www.youtube.com/watch?v=kTsub-NBILU>

<https://www.youtube.com/watch?v=7ktnrk2pS-Q>

<https://www.youtube.com/watch?v=jwcej3l8hTo>

MONETARY POLICY

<https://www.youtube.com/watch?v=uBaTPugw3M4>

<https://www.youtube.com/watch?v=gUGxGCW-k7o>

<https://www.youtube.com/watch?v=kXgtYlhZQFU>

PURCHASING POWER PARITY

<https://www.youtube.com/watch?v=g8dSoxmoBsg>

<https://www.youtube.com/watch?v=6MKdp6y3h7c>