HERBERT CHITEPO SCHOOL OF LAW AND BUSINESS SCIENCES

DEPARTMENT OF ECONOMICS AND FINANCE

BACHELOR OF COMMERCE	PART 1 SEMESTER 1
COURSE	INTRODUCTION TO FINANCIAL ENGINEERING
CODE	HFE115
DURATION	3 HOURS

INSTRUCTION TO CANDIDATES

1. THE PAPER COMPRISES 5 QUESTIONS.
2. YOU ARE REQUIRED TO ANSWER ANY FOUR QUESTIONS.
3. BEGIN THE ANSWER TO EACH QUESTION ON A FRESH PAGE OF THE ANSWER BOOKLET.
4. NON-PROGRAMMABLE SCIENTIFIC CALCULATORS ARE ALLOWED INTO THE EXAMINATION.
5. CANDIDATES WILL OBTAIN CREDIT FOR SHOWING ALL WORKINGS.

QUESTION 1

Define the following terms as they are used in financial engineering.

1.1 At the Money [5 marks]
1.2 In the Money [5 marks]
1.3 Information assymetry [5 marks]
1.4 Price volatility [5 marks]
1.5 Liquidity [5 marks]

QUESTION 2

2.1 Describe any 3 functions of derivatives . [9 marks]

2.2 Describe any four (4) attributes of a financial engineer [16 marks]

QUESTION 3

3.1 When first issued, a stock provides funds for a company. Is the same true of a stock option? Discuss. [6 marks]

3.2 "Buying a put option on a stock when the stock is owned is a form of insurance." Explain this statement. [6 marks]

3.3 Explain why a futures contract can be used for either speculation or hedging [7 marks]

QUESTION 4

"Options and futures are zero-sum games." Discuss this viewpoint. [25 marks]

QUESTION 5

5.1 Differentiate a Call Option from a Put Option. [4 marks]

5.2 Complete the summary of the effect on the Option Price of increasing one variable holding other variables constant

Variable	European Call	American Put
Exercise Price		
Time to Expiration		
Volatility		

[6 marks]

5.3 Consider a put option with an exercise price of $92 and a cost of $3.Tabulate and graph the profits and losses at expiration for various stock prices for the writer of the put option. [5 marks]

5.4 Consider a call and put option with the same exercise price of $ 80 and cost of $3, graph the profits and losses at expiration for a straddle comprising these two options. If the stock price is $80 at expiration, what will be the profit or loss? At what stock price (or prices) will the straddle have a zero profit? [10 marks]

END OF EXAMINATION PAPER