



“Investing in Africa’s future”
COLLEGE OF BUSINESS, PEACE, LEADERSHIP AND GOVERNANCE
NCSE 105: INTRODUCTION TO SOFTWARE ENGINEERING
END OF SECOND SEMESTER EXAMINATIONS
MAY 2021
LECTURER: DR. YOGESH AWASTHI
DURATION: 7 HOURS

INSTRUCTIONS

Answer the questions as per the instructions given in the sections

Start **each** question on a new page on your answer sheet.

The marks allocated to **each** question are shown at the end of the section.

Section A (60 Marks)

Q1. Answer any six questions from Section A.

Each question carries 10 marks

- Explain iterative waterfall and spiral model for software life cycle and discuss various activities in each phase.
- An application has the following : • 10 low external inputs, • 12 high external outputs • 20 low internal logical files • 15 high external interface files, • 12 average external inquiries and a value of CAF of 1.10. What are unadjusted and adjusted FP counts?
- Difference between functional and non-functional requirements.
- Define SRS. What are the characteristics of SRS?
- With the help of diagram, explain Spiral model. Write the weakness and strengths of Spiral Model.
- Suppose that a project was estimated to be 400 KLOC. Calculate the effort and development for each of the three modes i.e. organic, semidetached and embedded.
- What do you mean by W⁵HH of project management? What is the difference between Verification and Validation?
- What are reactive and proactive risk in software engineering? Explain with examples.

Section B (40 Marks)

Q2. Answer any two questions from Section B.

Each question carries 20 marks

- Consider a project to develop a full screen editor. The major components identified and their sizes are (i) Screen Edit – 8K (ii) Command Lang Interpreter – 4K (iii) File Input and Output – 3K (iv) Cursor movement – 4K (v) Screen Movement – 6K. Assume the Required software reliability is high, product complexity is high, analyst capability is high & programming language experience is low. Use COCOMO model to estimate cost and time for different phases.

Cost Drivers	Very Low	Low	Nominal	High	Very High	Extra High
RELY	0.75	0.88	1.00	1.15	1.40	--
CPLX	0.70	0.85	1.00	1.15	1.30	1.65
ACAP	1.46	1.19	1.00	0.86	0.71	

LEXP	1.14	1.07	1.00	0.95	--	--
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b. Some experimental evidence suggest that the initial size estimate of project affects the nature and the results of the project. Consider two different managers charged with developing the same application will be 50,000 lines, while the other estimates that it will be 100,000 lines. Discuss how these estimates affect the project throughput its life cycle.

c. Explain coupling among modules of a software. Discuss the types of coupling with regard to design of a Software.

END OF EXAMINATION
