

Software Metrics (CSE 4621)

Study Guide for Examination 2

General:

The exam will cover Chapters 5, 8, and 9– Slides 4, 5, 6 and Ishikawas_7_tools.

The first section of the exam will be a set of True/False comprehension questions.

The second section will contain a set of sentences with key words or phrases omitted. You will fill in the omitted item(s) from a provided list. The list will contain words and phrases that are not answers; others may address more than one sentence, so don't count on using a process of elimination.

The remainder of the exam will be composed of questions that address your understanding of some of the concepts we have discussed, e.g., be prepared (3) to create a flowgraph from a coded algorithm, (4) to perform a hierarchical decomposition from a flowgraph (I will provide the definitions of the primes, e.g., P_n , D_0 , D_1 , etc.), (5) to calculate from a given decomposition the hierarchical measures: depth of nesting for a flowgraph, number of nodes in a flowgraph and (6) to calculate McCabe's cyclomatic complexity measure, and (7) to answer some short essay questions.

Chapter 5

Review the characteristics of "Good Data". Review the distinction between a fault and a failure. Don't memorize the various Fault/Failure taxonomies; just be aware of their existence.

Study from my presentation on Ishikawa's Seven Basic Quality Tools. Study the sections of the SEI Practical Software Measurement report referenced in the presentation. Also, section 6.3 in the textbook describes many of these analysis techniques. Be prepared to create and/or interpret any of the charts and diagrams in Ishikawa's toolset.

Chapter 8

Review the software size, different arguments of measuring a program length, Halstead's approach, and Functional Points measures.

Chapter 9 (only study 9.1 and 9.2)

Chapter 9 is the key chapter for this section of the course. Review the Control-flow concepts of flowgraphs, hierarchical decompositions of flowgraphs, and hierarchical measures. Also, review Cyclomatic Complexity measure.