

## **Software Metrics (CSE 4621)**

### **Study Guide for Examination 1**

#### **General:**

The exam will cover Chapters 1, 2 and 3 (p87-p104).

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 (1) to apply empirical relations and the rules of the mapping to a specific software entity, (2) to discuss and apply the concept of Goal-Question-Metric, (3) to classify metrics according to the measurement scales, (4) to determine which statements are meaningful, and (5) to answer some short essay questions.

#### **Introduction to Metrics:**

Use the Introduction to Metrics presentation as your primary source; however, review Chapter 1 as well. Review the concept of Cost of Quality, the Characteristics of a Useful Metric, the Reasons for Collecting Metrics.

#### **Chapter 1**

Review the definition of measurement, measurement in software engineering, the metrics of interest to managers and software developers. Practice the exercises of Chapter 1.

#### **Chapter 2**

In section 2.1, understand the meaning of Empirical Relations, the rules of the mapping, and representation condition. In section 2.2, review Defining Attributes and review Direct vs. Derived or Indirect measurement. Section 2.3 on Measurement Scale Types is very important. Make sure you understand the concepts of nominal, relational, interval, ratio, and absolute scales. In section 2.4, review the concept of measurement meaningfulness. Review Table 2.8. Omit sections 2.4.3 and 2.4.4. Practice the exercises of Chapter 2.

#### **Chapter 3**

Review the classification of software measures as Process, Product or Resource. Make sure you understand Goal-Question-Metric. You will be asked to perform a GQM on the examination. Omit section 3.2.2 and 3.3; we will discuss each of these topics in detail later in the course. Omit sections 3.4, 3.5 and 3.6. Practice the related exercises of Chapter 3.