**TIM 58: Systems Analysis and Design**

**Homework Set #6**

*Due as a paper copy in class at the beginning of class Tuesday February 21.*

**1. What is a sequence diagram? (3 points)**

**2. What is the difference between a generic sequence diagram and an instance sequence diagram? (3 pts)**

**3. What is a communication diagram and why are they useful? (3 pts)**

**4. What is a behavioral state machine? (3 pts)**

**5. What distinguishes Behavioral State Machine diagrams from Sequence Diagrams and Collaboration Diagrams? (3 pts)**

**6. Why would an analyst choose to draw a sequence diagram instead of a communication diagram? Why would an analyst choose to draw a communication diagram instead of a sequence diagram? (3 pts)**

1. **Explain the term *transition* with respect to Behavioral State Machines. What role does a *guard condition* play in transitions? (3 pts)**

**8. On p. 232 of our book, Figure 2-26 has a CRUDE Matrix. If you look at the *Librarian Actor* row and the *Personnel Office Actor* column, you will see R, E. With respect to these two actors, what do R and E signify? Why isn’t there a U or a D? (3 pts)**

**9. Redraw Figure 6-16, a Behavioral State Machine, on page 22. In your diagram, add the following changes and details…(6 points)**

**Once a patient is under observation their original diagnosis no longer matters. A patient who is under observation can become an *ICU Patient* (ICU stands for Intensive Care Unit) if their *detailed diagnosis* is Grave. If their detailed diagnosis is Healthy they are released. Otherwise they remain under observation. An ICU patient is released from the hospital when their diagnosis is healthy.**