Mobile Robotics Course Study Guide: Sensors & Sensing Fall 2009

Note: Anything on the list is fair game, anything not on the list will not be on the quiz

From lecture and reading (Murphy, pp. 196 - 218)

- Define *transducer*.
- Define the classes of sensors: proprioception, exteroceptoin, exproprioception.
    - Give examples.
- What is the difference between an active and passive sensor?
    - Give an example of both.
- What is *active sensing*?
- What is sensor modality?
    - Give examples of different sensors that have the same modality.
- Define *logical sensor*?
    - Give examples.
- What does it mean for sensors to be *logically equivalent*?
- Describe *sensor fusion*.
    - Give examples of the different types other than the one given in class: *redundant, competing, and complementary*.
- What does it mean for a sensor to give a *false positive* or a *false negative*?
- Describe these attributes of a sensor: FOV, resolution, accuracy, and responsiveness to target domain.
- Describe sensors by their type, characteristics, and potential uses
    - Shaft encoders, touch (tactile) sensors, light sensors, IR reflectance sensor, optical rangefinder, sonar, GPS.
- Define these terms and give examples: *cross-talk, specular reflection, and foreshortenting.*