Rover Modules Assignment

Create tutorials that demonstrate the use of

1. GPS Module – you have been provided with the Adafruit Ultimate GPS Breakout - 66 channel w/10 Hz updates and external antenna (https://www.adafruit.com/products/746)
    a. Create a sketch that displays current latitude and longitude on user request (input through serial monitor, button press, etc.)
    b. Create a sketch that displays distance and course to specific GPS location on user request. You are encouraged to use the TinyGPS++ library and can follow the tutorial at https://makezine.com/projects/gps/ to get started. Consider changing the target latitude and longitude to something nearby to test the navigation instructions!

2. Ultrasonic range finder – you have been provided with HC - SR04 Ultrasonic Distance Measuring Sensor (https://www.sparkfun.com/products/15569)
    a. Create a sketch that displays distance to object on user request

3. RF transmitter and receiver – you have been provided with a 433MHz RF Transmitter/Receiver Module (https://www.amazon.com/gp/product/B01H2D2RH6?smid=AMSX5DNP8SYFQ&psc=1).

    Consider following http://randomnerdtutorials.com/rf-433mhz-transmitter-receiver-module-with-arduino/ so that we're all doing the same thing.
    a. Using two Arduinos, create sketches to transmit a 12-character string containing one number with a leading 'X' and padded with 'Z'. The receiver should display the numbers and indicate whether the number is even or odd.
        i. Example: The transmitter might send "X13ZZZZZZZZZ" and the receiver would display (on the serial monitor) "13 is odd"

Each tutorial should be documented on its own page on your team's website and include:

- An introduction of the device and what a visitor can expect to achieve by following your tutorial
- A description of how the device might be implemented to help you with the autonomous rover missions
- A list of required hardware
- A list of required libraries (include links)
- A wiring diagram—look at Fritzing (http://fritzing.org/home/) for guidance on how your wiring diagram should appear. You aren't required to use Fritzing, but you should create your diagrams yourself.
- Sample Arduino sketch code (comment your code!)
- Links to references that you used to help you create your tutorial