

**CSCI 283 and CSCI 172- Graduate and Undergraduate Computer Security - Fall 2010**  
**George Washington University**

**Homework 1**

due 15 October, 6 pm.

100 points

**Policy on collaboration:** All examinations, papers, and other graded work products and assignments are to be completed in conformance with The George Washington University Code of Academic Integrity. You may discuss HWs among yourselves, and work on them in groups. However, each student is expected to write his or her own HW out independently; you may not copy one another's assignments, even in part. You may not collaborate with others on the test and final.

You are expected to cite all your sources in any written work that is not closed book: papers, books, web sites, discussions with others - faculty, friends, students. For example, if, in a group, one student has a major idea that leads to a solution to a HW problem, all other students in the group should cite this student.

*You may not refer to solutions to previous years' problem sets, or ask for help students from previous years, except the TA.*

*Any violations will be treated as violations of the Code of Academic Integrity.*

**PLEASE submit all HW on Blackboard only. Name your files:**  
**CS283\_HW1\_LASTNAME\_FIRSTNAME.doc or .pdf or**  
**CS172\_HW1\_LASTNAME\_FIRSTNAME.doc or .pdf**

You are to design a system that measures tire pressure and reports it to the automobile's computer.

1. (15 points) Describe the goals of your system. What do you intend it to do? Briefly, how will you achieve your goals? At this stage, do not use any cryptography and do not perform a security analysis. Simply describe the functionality of a tire pressure sensor system and the simplest design to achieve this functionality. Do not look at or reference existing designs. Provide a figure and answer in less than one page including the figure.
2. (25 points) Describe anticipated threats to your system. Answer in one page or less.
3. (20 points) Describe the security policy of your system, in order to protect against the threats described in question 2. Answer in half a page or less.
4. (40 points) How will you use cryptography to implement the security policy? Answer in two pages or less.