ENRG3310: Introduction to Energy and Sustainability **Midterm I**

Prof. Ognjen Š. Miljanić September 26, 2017

Name: _____ Student ID Number: _____

Last First

Read directions very carefully. Write your answer legibly in the designated spaces. *Total number of points is 200.*

1. Imagine someone sneaking into the US at night and replacing all gasoline-powered cars with electric ones, of roughly similar specifications. How much less gasoline would we use? How much more electricity would we need? How does the second number compare to the current US electricity production? *40 points*

2. Estimate daily energy consumption (in kWh) of a small two-bedroom house in Houston. You will need to look up power ratings of typical appliances, estimate which appliances are present and how long are they typically running per day. Make sure to include the air conditioning. *40 points*

3. Using the data from www.world-nuclear.org and other sources, describe the today's world's top three country producers of nuclear energy in (*a*) absolute terms and (*b*) per capita basis. *30 points*

4. What is YOUR most current one-sentence definition of sustainability? How has it evolved since the class started couple of weeks ago? *10 points*

5. Using data from the BP Statistical Review of World Energy and population data, sketch a rough plot of China and India's coal consumption changes between 1965 and 2015. Then, do analogous plot for the two countries GDPs (gross domestic products) in the same time period. Explain the differences you observe. *30 points*

GROUP PROJECT PROPOSAL

Turn this in separately. *50 points*