INSTRUCTIONS ON SOFTWARE INSTALLATION FOR COMPUTER LABORATORY ON MULTI-ENERGY SYSTEMS FOR THE COURSE OF LOW-CARBON TECHNOLOGIES (FOR WINDOWS x64)

At least one person for each couple/group should install Python (Anaconda), the package Pyomo and the solver (CBC), as following:

1) Install Anaconda3 (Scientific Python distribution)

- We recommend installing Anaconda3, a widely-used Python platform that includes an Integrated Development Environment (Spyder), a notebook-style interface (Jupyter), and a broad set of Python modules.
- From https://www.anaconda.com/distribution/#download-section install the Python 3.7 version for your OS. Just download the exe file, run it and follow the prompts. Be sure to check the box **Add Anaconda to my PATH environment variable** when prompted during the installation process
- You can open Anaconda/Python by going to your computer's Start Menu, open the Anaconda 3 (64-bit)>>Spyder (Anaconda 3). Pin this to your Task Bar if you want quick access
- Note: Anaconda3 Includes several packages for scientific computing already, and it supports easy installation of Pyomo and solvers. However, Anaconda isn't the only choice in Python IDEs. Popular alternatives include Eric, PyCharm, and PyDev

2) Install Pyomo (Python package for optimization)

- Pyomo is a Python-based open-source software package that supports a diverse set of optimization capabilities for formulating and analyzing optimization models
- Once you have Anaconda, Pyomo can be installed by going to your Start Menu and opening the Anaconda 3 (64-bit)>>Anaconda Prompt (it looks like an old DOS prompt). Once the Anaconda Prompt is open, type in the command:

  ```
  conda install -c conda-forge pyomo
  ```

  enter y when it asks for yes/no, wait for the process to end
- (Alternative to previous point) The *conda install* command in the prompt is the way to install any Python package you don't already have installed (the other major way is with *pip*). After installing Anaconda3, you can install Pyomo in your system Python installation by executing the following line in a shell:

  ```
  pip install pyomo
  ```
- Further instructions can be found here: http://www.pyomo.org/installation/

3) Install CBC (open-source MILP solver)

- Download binaries and place file .exe and license files in the working directory https://ampl.com/products/solvers/open-source/#cbc
- You are now ready to use Gurobi from within Anaconda. Your next step is to launch the Spyder IDE.