

# ELG4125 (Fall2017)

## Approaching Zero

Design Project Based on the Concept of  
**Grid Connected Net Zero Energy Buildings**

**Net Zero: Site, Source, Cost, Emission**

“Group of Two students” Work

## Video

**Submit a 3-min Video that reflect your Design  
before the Final Exam**

# The Task

- This is an open-ended group project work. The given outline is approximate as is the case of any engineering project. The guiding facts when preparing your solutions are common sense, technical facts, and governing standards.
- Research the definition of net zero energy building (NZEB).
- Investigate new sustainable and energy efficient building technologies. Energy efficiency measures include design strategies and features that reduce the demand-side loads such as.
- Look for example of NZEBs; compare and analyze solutions.
- Investigate various building energy efficiency rating systems including LEED.

# Key to Design NZEB

- NZEB principles can be applied to most types of projects, including residential, industrial, and commercial buildings in both new construction and existing buildings.
- The key to designing NZEBs is first reducing energy demand as much as possible, and then choosing good energy sources.  
The following is a simple order of operations:

Reduce energy loads

Optimize design for passive strategies and approaches

Optimize design of active systems

Recover energy whenever possible

Generate energy on-site

Buy energy with carbon offsets

# Ideas for Considerations

- Green Tomorrow House
- Greenest Urban Development on World
- Green Office Building
- Greenest School on Earth
- Green Campus
- Green Airport
- Green Apartment Building
- Or any other building of choice!