Task 1: Sizing a Building Load
(Presented by Mid of October, 2019)

Task 2: Greening the Building and LEED Certifying
(Presented by End of November, 2019)
Task 1: Sizing a Building

• Form a team of two students only.
• Adopt an existing building in the campus, for example SITE, CBY, ARC, and any other building in the campus.
• Assume you are the engineer in charge of designing the electrical load of the building, as the building is not constructed yet.
• Try to develop the approximate floor plan of the building using any drawing, sketching, or simulation software. Using simulation tools gives you an advantage in evaluating the project.
• Investigate the required loading elements in the building by estimating the load in watts for each room, space, floor, then the entire building.
• Design the main layout of the electrical work based on sizing the main transformer(s) and sub-transformers in the building as well as the corresponding cable sizes.
• Generate a block diagram that describes the above layout.
• The units used in sizing the building are Watt, Ampere, Volt, and VA.
• Try to obtain the building power consumption in kWh from the University Web resources: We will try to help!
• As a final step, turn the entire building into a load in a circuit diagram. Describe the load in Ohm, the source in Volt, and the main conductor (cable) current in Ampere.
• Use appropriate “current-conductor size” tables from the Web to size cables.
• The sizing work details should be submitted in a portfolio of no more than five pages that include diagrams and tables only. Minimum text, and “NO copy and paste” at all.
• **Submission (10 marks):** Mid of October, 2019.
Task 2: Greening the Building

• Look at the latest building consumption in kWh from the University resources. If not available, it can be estimated.
• Study LEED certification especially the electrical part.
• Propose electrical approaches ONLY to reduce the building kWh consumption.
• Conduct cost-benefit analysis to examine the approach(s).
• Using software simulation tools gives you an advantage.
• Add the work of this task to your portfolio but not to exceed 10 pages in total.
• Submission (10 marks): End of November, 2019.