
Progress Report May 2014

By Dr. Prabir Barooah, Associate Professor, Mechanical and Aerospace Engineering

Co-PI’s:
Duzgun Agdas, Lecturer, Engineering School of Sustainable Infrastructure and Environment
Ravi Srinivasan, Assistant Professor, M.E. Rinker, Sr. School of Building Construction

Project Description
The building sector is the largest consumer of energy in the US and the State of Florida, ahead of transportation and industry. A typical energy use by Florida households is 40% higher than the U.S. average. As energy resources are dwindling, it is crucial to proactively seek ways to improve new and existing buildings’ energy efficiency. To achieve higher standards in building design and operation, a solid foundation of energy engineering and sustainability principles is essential. Currently, there are no courses offered to students or industry professionals with a distinct focus on energy in built environment, specifically for the design and operation in Florida’s distinct climate conditions. Another limitation of existing courses is that they are focused on either design or operation, while they impact energy use in an intertwined manner. This course therefore emphasizes operation of buildings as much as their design. Operational aspects of buildings mostly involve operation and control of their HVAC and lighting systems. The course is therefore highly interdisciplinary, with lectures delivered to educate students on building control systems and its impact on the energy use, in addition to the design aspects.
The project doesn’t support any students since it is a course development project. A number of external collaborators will be leveraged, including Dr. Herbert Ingley at the Mechanical and Aerospace Engineering Dept at the University of Florida and Dr. Timothy Middelkoop at the University of Missouri to design course content.

Budget: $67,960 (includes course design and instructors times for one semester of teaching).

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The course is planned to be offered starting Fall 2014 in a distance education format through the University of Florida's EDGE (Electronic Delivery of Gator Engineering) program. Course material will also be made available through FESC website. At present the PIs are in the course design stage. A textbook has been selected out of a number of possible choices. A set of reading materials has also been prepared. Approximately 20% of the lecture content has been developed by the PIs so far.

Since the project is in its infancy, the project hasn’t been leveraged for external grant applications so far. However, this project is likely to lead to greater collaboration among the PIs and other collaborating faculty, which is envisioned to lead to successful collaborative grant applications to external agencies.