

IPRO-335

The Interprofessional Approach to Architectural Capstone Design

Objective:

IPRO-335's objective this semester was to design a small airport serving several communities. This project involved a complete design including:

- ✚ Overall layout of the airport
- ✚ Structural analysis and material selection for the terminal
- ✚ Design of a heating, ventilation, and air conditioning system (HVAC)
- ✚ Design of an electrical and lighting system
- ✚ Address acoustic issues
- ✚ Preparation of detail drawings for the terminal (Structural, HVAC, and lighting)

Our design concept is "*Airport of the Future.*" The airport will eventually serve as a commercial and business center for the community.

Basic Organization/Tasks:

Our team was composed of six students, each with a different area of expertise. Everyone focused on their respective tasks based on their area of expertise. These tasks were:

- ✚ Architectural design and layout
- ✚ Structural analysis and foundation design
- ✚ HVAC design
- ✚ Lighting, electrical and acoustic design

Accomplishments:

The IPRO-335 team came up with an overall layout of the airport and a complete design of the airport terminal. The structural analysis, HVAC design and analysis, and lighting design were all completed with load calculations and drawings.

Obstacles/Critical Barriers:

With the small team size, a numerical analysis of the acoustics, cost estimate, and a design of other airport structures (such as the control tower) were not performed.

Next steps:

With the preliminary design and layout completed, the next step is to perform the tasks which were not performed and/or completed. Since our design concept entails a possible expansion, a design of the expanded airport should be considered.

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Student Members:

John Doles, Civil Engineering
Hana Ishikawa, Architecture
Janet Martinez, Architectural Engineering
Raquib Pramanik, Aerospace Engineering (Team Leader)
Dan Rehberg, Architectural Engineering
Mihdi Vahedi, Electrical and Computer Engineering