Course

HVAC Fundamentals and HVAC System Design

AEC Learn

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Syllabus
You'll learn the skills that engineers or engineering students need in order to design HVAC systems. Whether you are planning to apply for your first HVAC Engineering job or you recently started your career as an HVAC Engineer, you need to learn these skills. By learning these skills, you will be equipped to start working on any HVAC project, and you will know how to find the information you need for various designs.

Build a Winning Resume
Besides learning the technical skills, you will receive guidance and help to create a winning resume. You will also receive a template resume to use to create your own. The template resume is actually based on the resume that I used to land my job at Stantec.

Get Ahead of the Curve
You will learn about proven strategies to boost your job application and be the number one candidate.

Crush the Interview
Another great feature of this program is that you will receive guidance on how to have a stellar performance at a job interview. You will boost your confidence and avoid the common mistakes that many applicants make.

Job Application Tips
Lastly, you will receive proven and effective tips to get interviews for the career opportunities that you are really interested in.

Detailed Syllabus		
Module 1	**Fundamentals – HVAC is everywhere from houses to International Space Station**	• Why we need HVAC and how HVAC systems are designed from concept phase to issue for construction (IFC) • Learn how to read and use psychrometric chart to know exactly what air treatment you need. Plus, learn about the most common refrigeration cycle

Module 2	**HVAC Systems – How amazing mechanical and electrical components work together to treat air**	• Learn about air-side components such as fans, packaged equipment, and variable air volume (VAV) systems • Learn about hydronic systems such as chillers, pumps, cooling towers, boilers, and central plants
Module 3	**Load Calculation - Analyze how much heat is needed to transfer into or out of a room/space**	• Learn what air properties make humans comfortable [it's not only temperature] • What is Indoor Air Quality (IAQ) and why we need ventilation • How to analyze heat transfer into and out of a space
Module 4	**Load Calculation Software - How to use Hourly Analysis Program (HAP) for load calculation**	• How to calculate loads using Hourly Analysis Program (HAP) • How to understand the load calculation results and make sure you did it right [no garbage in, garbage out]
Module 5	**Air and Water Distribution System Design**	• Duct systems, airflow analysis, fun mathematical models, design method and great tools that you need to use for your great design • Piping systems, flow analysis, mathematical models, and engineering tools for efficient design • Common mistakes: using rule of thumb and non-engineering methods and ending up with massive financial losses and

		environmental damages; believe it, it's way too common
Module 6	**Equipment Selection – Shop as an engineer**	• The super fun process of finding and selecting the right equipment [it's like shopping] • How to show equipment on drawings and develop equipment schedules like a pro
Module 7	**HVAC Controls – How to sequence different functions of the system to achieve the best result**	• Learn how to design control logic for the HVAC systems that you design • Learn how to use tools for accurate and efficient design of sequence of operation • Common misconception: Electrical, Computer, or I&C engineers design HVAC control logic
CAD Stop	**Recommendation for best 3D and 2D Software Learning**	• There are tens, if not hundreds, of different online courses for learning AutoCAD and Revit. You will receive recommendation for the best courses to take • Do not invest on learning all the features of AutoCAD and Revit. As an HVAC Engineer, you only need to learn what you will use. You will receive recommendation on the topics that you need to focus on

Module 8	**HVAC Design Project – design your first HVAC system**	• You will receive drawings and Revit model of an office to design its HVAC system • You will calculate loads, select systems, design controls, show the system on drawings, create complete drawings sets, create specifications, and submit a complete package
Bonuses	**Building Resume, Job Application Strategies, Interview Skills, and Exclusive Facebook Community**	• Learn about the best resume format and its proper length • Learn effective job application strategies to boost your application • Learn how to have the best performance at a job interview. • Share your work, ask you questions, and get feedback from other students and myself in the Facebook community.