ENVIRONMENTAL CONTROL SYSTEMS 1
ARCH 4/591 Winter 2022

Instructors: Alison G. Kwok, PhD, FAIA, CPHC akwok@uoregon.edu; Tom Hahn, RA, CPHC tomh@uoregon.edu

Lectures: Tu/Th 12:00–1:20 pm; CRN 491: 20340; 591: 20342

Labs: see schedule for days, times

Description
This course is designed to provide students with foundational information, design strategies, and tools to apply at schematic design level. Passive (architectural) solutions will be emphasized, yet active (mechanical/electrical) solutions will also be covered. Major topics surrounding the environmental design of buildings and communities with regard to energy use, codes/standards, climate-responsive design, thermal comfort, cognizant codes and standards, HVAC systems, renewable energy, indoor air quality, measurement and verification, vertical transportation, and the tools needed to understand an ecological approach to design. The instructors of this course are enthusiastic, committed, and critical about the pedagogy of this course and have carefully choreographed your participation and learning that will prepare you to be the future stewards of the built environment. Students will actively learn concepts and principles in section meetings. Four individual assignments + a building performance case study, weekly quizzes.

Eligibility
This is a required course for professional majors in the Department of Architecture. ARCH 491 students are required to have completed three terms of design studio and ARCH 591 students are required to have completed two terms of design studio in advance of taking this course. The course is also open to ENVS students with instructor approval.

Access
The course will be conducted in a lecture plus lab format, and will include readings, quizzes, projects, lab exercises, and discussions, and field trips. The course content and interaction will be delivered in-person, with certain portions recorded and available for later asynchronous viewing. Course activities that have “live demonstration” aspects may be available remotely by recording but also allow students to adhere to all UO COVID-19 health/ safety guidelines for in-person events and gatherings.

Required Texts
Mechanical and Electrical Equipment for Buildings, 13th, 2019; The Green Studio Handbook, 3rd edition, 2018 (e-book available through UO library; print copy at Duckstore or Amazon); Pilkington Sun Angle Calculator (Duckstore only), Thermal Delight in Architecture by Heschong (print copy at Duckstore or Amazon); Govee temperature/relative humidity data logger (Amazon)

Teaching Team
GE: Camila Coronado, Carli Torti, Vayle Khalaf; TA: Yash Akhouri, Caleb Bean, Makayla Bruce, Sage Fetkenhour, Mia Kalatzes, Reed Olszewski

Final Exam Period: Friday, March 18, 2022, 8–10 am (alternatively March 15, 2022, 8 – 10)