![GEO Study Abroad logo]

COURSE DESCRIPTION

Urban agriculture can promote nutritional security, food resilience, reduced distribution embodied impacts, and equitable access to healthy foods for burgeoning urban populations. Yet, the lack of open space, contaminated brownfields and surging land prices all constrain the establishment of urban farms and gardens. New urban agricultural production sites can be made available through new building-integrated growing of agriculture (the new "BIG [ag]") such as rooftop farming, green facades, and controlled environment agriculture, creating simultaneous co-benefits where building outputs are recycled as inputs to the agricultural system, and agricultural outputs ultimately provide healthy, resilient, and sustainable inputs to building systems and users.

To develop BIG [ag] concepts suitable for North America, this course will draw on and learn from an area of the world that has made a deep commitment to the development of urban agriculture: Singapore. One of the densest cities in the world, Singapore has 8592 persons/km and is 100% urbanized. Singapore has about 720 km2, of which only 1% is set aside for food production, thus the region imports over 90% of its food. Nonetheless, Singapore's government aims to produce 30% of its own food by 2030 (30 by 30 Program). Singapore has many successful models of building-integrated agriculture, which will be toured, experienced and analyzed by students. Students will have the opportunity to meet with urban farm operators and learn from their experience. Using these successful international models of urban food production, students in the case study seminar will document new BIG [ag] concepts through extensive field study using sketch, photographs, diagrams, 2D/3D drawings and models, then propose a viable model for the United States testing ideas on urban sites in the U.S.

Prerequisite: Eligibility for ARCH 4/584, LA 4/539

COURSE OBJECTIVES

The course will:

- Expose students to architectural concepts and forms that promote food production on and in buildings.
- Introduce students to integrated design, whereby design students will work with horticulture students from OSU to better understand plant requirements.
- Collaborate across disciplines to develop and integrate new knowledge.
- Develop a culture of observation, documentation and design concept translation.
- Articulate ideas using various methods of representation, ranging from hand-drawn sketches to digital models.

Student Outcomes. Students who successfully complete this course will:

- Learn design and operational strategies for integrating food production into buildings.
- Understand how building outputs (e.g. heat, CO2, water) can be recycled into agriculture inputs.
- Understand building-integrated agriculture implications for building enclosure and MEP systems.
- Be able to identify, articulate and translate solutions discovered from case studies and site visits into own work.
- Develop cultural awareness.

INSTRUCTIONAL METHODOLOGY

The course will be conducted in person in Singapore / Malaysia for the initial three weeks, which will include extensive field investigation, guest lecture, interviews with farming operators, class discussions, and student presentations. Students will develop skills for building case study documentation, diagrammatic translation, 2D and 3D representation and presentation of ideas during this period. During the fourth week, students will work independently to synthesize field study findings into a cohesive and polished document that translates models of building-integrated food production studied on-site in Asia to North American settings. Texts will be used as reference material to augment student knowledge.

METHOD OF EVALUATION (GRADING)

Performance in this course is based on a pass/no pass (P/NP) evaluation model. To be successful, students will be expected to engage in field excursions, critical discussion and progress review during class sessions. Students will be given required deliverables for the case study term assignment and will be evaluated during an in-person midterm and final review with guest reviewers, and final presentation of case study term project (virtual). Final feedback from the instructor will include a checklist of performance criteria and written assessment. Evaluation for the course will be structured as follows:

10% of term grade from class participation and preparedness
25% of term grade from midterm review performance
25% of term grade from final review performance
40% of term grade from final case study document

COURSE OUTLINE
In person in Singapore/Malaysia + excursions (subject to change)
Week 0: Travel to Asia
  Aug 15: Depart U.S.
  Aug 16: Arrive in Singapore

Week 1: Course and topic introduction / Begin case studies documentation
  Aug 17: Classroom / Field Excursion
  Aug 18: Field Excursion / Classroom
  Aug 19: Field Excursion
  Aug 20: Field Excursion / Classroom
  Aug 21: Field Excursion
  Aug 22: GEO Excursion / Field Excursion

Week 2: Case studies documentation
  Aug 24: Field Excursion
  Aug 25: Field Excursion / Classroom
  Aug 26: Field Excursion
  Aug 27: Field Excursion / Classroom (midterm pinup evaluation)
  Aug 28: Field Excursion
  Aug 29: Travel to Kuala Lumpur

Week 3: Case studies documentation
  Aug 30: Kuala Lumpur GEO Excursion
  Aug 31: Kuala Lumpur GEO Excursion
  Sep 01: Travel to Singapore / Classroom
  Sep 02: Field Excursion
  Sep 03: Field Excursion / Classroom
  Sep 04: Field Excursion / Classroom (final review pinup evaluation)
  Sep 05: Departure from Singapore

Remote work, virtual class where indicated
Week 4: Case study final report / translation of ideas for a North American site
  Sep 07: Independent work
  Sep 08: Independent work
  Sep 09: Independent work
  Sep 10: Independent work
  Sep 11: Independent work / virtual class final presentations of completed document

Field excursion sites will be confirmed closer to the term but may include projects such as:

ComCrop
http://comcrop.com/
SkyGreens
https://www.skygreens.com/about-skygreens/
Artisan Green
https://artisan.green/
Singapore Indoor Farms
https://singaporeindoorfarms.com/wp/
Tomato Town
https://thetomatotown.com/technology/
SG Farms
https://www.sfa.gov.sg/fromSGtoSG/farms
Mothership
https://mothership.sg/2021/03/fresh-produce-local-farms-sfa/
Grobrix
https://grobrix.com/
GroGrace
https://www.grograce.store/
Sustenir
https://www.sustenir.com/
NextGen Farms
https://www.ngf.sg/
FogoFungi
https://www.fogofungi.com/
LivFresh
https://backyardproductions.sg/livfresh/
Kin Yan Farm (mushrooms)
https://thesmartlocal.com/read/kin-yan-mushroom-farm/
Edible Garden City
https://www.ediblegardencity.comKampung Admiralty
Parkroyal Pickering
https://www.panpacific.com/en/hotels-and-resorts/pr-collection-pickering/location/sustainability.html
Capita Spring Arden Food Forest
Funan
Kampung Admiralty

COURSE READINGS
Proksch, G. (2017). *Creating Urban Agricultural Systems: An Integrated Approach to Design*. Taylor & Francis. (available on Canvas)

Students will also be provided with supplemental texts from peer-reviewed journals and conference proceedings to support their learning on the topic of building-integrated agriculture.

Academic Misconduct

[The University Student Conduct Code](#) defines academic misconduct. Students are prohibited from committing or attempting to commit any act that constitutes academic misconduct. By way of example, students should not give or receive (or attempt to give or receive) unauthorized help on assignments or examinations without express permission from the instructor. Students should properly acknowledge and document all sources of information (e.g. quotations, paraphrases, ideas) and use only the sources and resources authorized by the instructor. If there is any question about whether an act constitutes academic misconduct, it is the students' obligation to clarify the question with the instructor before attempting an act. Additional information about a common form of academic misconduct, plagiarism, is available at [researchguides.uoregon.edu/citing-plagiarism](#).

Prohibited Discrimination and Harassment Reporting

Any student who has experienced sexual assault, relationship violence, sex or gender-based bullying, stalking, and/or sexual harassment may seek resources and help at [Help for Victims and Survivors](#). To get help by phone, a student can also call either the UO's 24-hour confidential hotline at 541-346-7233 [SAFE], or the non-confidential Title IX Coordinator at 541-346-2204. From the SAFE website, students may also connect to [Callisto](#), a confidential, third-party reporting site that is not a part of the university.

Students experiencing any other form of prohibited discrimination or harassment can find information at [How to Get Support](#). You can contact [Investigations and Civil Rights Compliance](#) through this link and at 541-346-3123, or the [Dean of Students Office](#) at 541-346-3216 for help. As UO policy has different reporting requirements based on the nature of the reported harassment or discrimination, additional information about reporting requirements for discrimination or harassment unrelated to sexual assault, relationship violence, sex or gender based bullying, stalking, and/or sexual harassment is available at [Discrimination & Harassment](#).

The instructor of this class, as a Student Directed Employee, will direct students who disclose sexual harassment or sexual violence to resources that can help and will only report the information shared to the university administration when the student requests that the information be reported (unless someone is in imminent risk of serious harm or a minor). The instructor of this class is required to report all other forms of prohibited discrimination or harassment to the university administration. Specific details about confidentiality of information and reporting obligations of employees can be found at [Employee Reporting Responsibilities](#).

Mandatory Reporting of Child Abuse

UO employees, including faculty, staff, and GEs, are mandatory reporters of child abuse. This statement is to advise you that your disclosure of information about child abuse to a UO employee may trigger the UO employee's duty to report that information to the designated authorities. Please refer to the following links for detailed information about mandatory reporting: [Mandatory Reporting of Child Abuse and Neglect](#).