Fiscal Unit/Academic Org	Anthropology - D0711
Administering College/Academic Group	Arts and Sciences
Co-adminstering College/Academic Group	
Semester Conversion Designation	New Program/Plan
Proposed Program/Plan Name	Wicked Science
Type of Program/Plan	Graduate interdisciplinary specialization
Program/Plan Code Abbreviation	
Proposed Degree Title	

Credit Hour Explanation

Program credit hour requirements		A) Number of credit hours in current program (Quarter credit hours)	B) Calculated result for 2/3rds of current (Semester credit hours)	C) Number of credit hours required for proposed program (Semester credit hours)	D) Change in credit hours
Total minimum credit hours required for completion of program				10	
Required credit hours offered by the unit	Minimum			1	
	Maximum			7	
Required credit hours offered outside of the unit	Minimum			3	
	Maximum			10	
Required prerequisite credit hours not included above	Minimum			0	
	Maximum			0	

Program Learning Goals

Note: these are required for all undergraduate degree programs and majors now, and will be required for all graduate and professional degree programs in 2012. Nonetheless, all programs are encouraged to complete these now.

Program Learning Goals

- Tackle wicked problems using a systems-thinking approach that seriously considers the roles, interests, and perspectives of stakeholders.
- Collaborate effectively with stakeholders and team members from diverse backgrounds and experiences.
- Communicate scientific research and ideas to diverse audiences and through different modalities.
- Meet ethical, collegial, and professional expectations and standards in collaborative research and other professional endeavors.
- Articulate a sense of purpose and develop competencies, skills, and habits that prepare them for life-long learning about and engaging with wicked problems.

Assessment

Assessment plan includes student learning goals, how those goals are evaluated, and how the information collected is used to improve student learning. An assessment plan is required for undergraduate majors and degrees. Graduate and professional degree programs are encouraged to complete this now, but will not be required to do so until 2012.

Is this a degree program (undergraduate, graduate, or professional) or major proposal? Yes

Does the degree program or major have an assessment plan on file with the university Office of Academic Affairs? No

DIRECT MEASURES (means of assessment that measure performance directly, are authentic and minimize mitigating or intervening factors)

Classroom assignments

- Embedded testing (i.e. specific questions in homework or exams that allow faculty to assess students' attainments of a specific learning goal)
- Pre- and post-testing
- Other classroom assessment methods (e.g., writing assignments, oral presentations, oral exams)

Evaluation of a body of work produced by the student

- Portfollio evaluation of student work

INDIRECT MEASURES (means of assessment that are related to direct measures but are steps removed from those measures)

Surveys and Interviews

- Student survey
- Alumni survey
- Student evaluation of instruction
- Student interviews or focus groups

Additional types of indirect evidence

- Job or post-baccalaureate education placement
- Curriculum or syllabus review
- Comparison or benchmarking

USE OF DATA (how the program uses or will use the evaluation data to make evidence-based improvements to the program periodically)

- Meet with students directly to discuss their performance
- Make improvements in curricular requirements (e.g., add, subtract courses)
- Make improvements in course content
- Make improvements in course delivery and learning activities within courses
- Make improvements in learning facilities, laboratories, and/or equipment
- Periodically confirm that current curriculum and courses are facilitating student attainment of program goals

Program Specializations/Sub-Plans

If you do not specify a program specialization/sub-plan it will be assumed you are submitting this program for all program specializations/sub-plans.

Pre-Major

Does this Program have a Pre-Major? No

Attachments

- complete proposal GIS Wicked Science.pdf: WS Proposal

  (Program Proposal. Owner: Healy,Elizabeth Ann)
- WS Concurrence received.pdf: Concurrence received

  (Support/Concurrence Letters. Owner: Healy,Elizabeth Ann)
- WS concurrence sent.pdf: Concurrence sent

  (Support/Concurrence Letters. Owner: Healy,Elizabeth Ann)
- Wicked Science GIS response letter-final[80].pdf: Additional concurrence received

  (Support/Concurrence Letters. Owner: Vankeerbergen,Bernadette Chantal)

Comments

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Healy,Elizabeth Ann	08/25/2022 02:40 PM	Submitted for Approval
Approved	Guatelli-Steinberg,Debra	08/25/2022 04:13 PM	Unit Approval
Approved	Vankeerbergen,Bernadette Chantal	09/22/2022 12:42 PM	College Approval
Pending Approval	Carpenter,Thomas J Pearce,Laura Elizabeth Brown,Lindsey Kathleen	09/22/2022 12:42 PM	GradSchool Approval

THE OHIO STATE UNIVERSITY

College of Arts and Sciences

Department of Anthropology
4034 Smith Laboratory
174 West 18th Ave.
Columbus, OH 43210-1106

614-292-4149 Phone
614-292-4155 Fax

anthropology.osu.edu

August 24, 2022

Dear Colleagues,

Please find attached our proposal for a Graduate Interdisciplinary Specialization (GIS) in Wicked Science. This is an interdisciplinary specialization that involves faculty and staff from multiple departments, colleges, institutes, and offices across campus.

The attachment contains the following documents:

1. Letter from the Graduate Studies Committee (GSC) of the Department of Anthropology indicating that they reviewed and approved the proposal.
2. The proposal for a Graduate Interdisciplinary Specialization (GIS) in Wicked Science.
3. The syllabi for the required courses of the Graduate Interdisciplinary Specialization (GIS) in Wicked Science.
4. A document that lists the colleges and departments that have either provided concurrence of did not respond (and for which concurrence is assumed).
5. A document with the emails sent to colleges and departments across campus asking for concurrence.
6. A document with emails received from colleges about the concurrence.

We hope that this documentation is sufficient for approval of our proposal for the Graduate Interdisciplinary Specialization (GIS) in Wicked Science. If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

Mark Moritz
Professor and Chair of the Graduate Studies Committee

THE OHIO STATE UNIVERSITY

College of Arts and Sciences

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4034 Smith Laboratory
174 West 18th Ave.
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April 24, 2022

Dear Colleagues,

The Graduate Studies Committee of the Department of Anthropology has reviewed and approved the proposal for a Graduate Interdisciplinary Specialization (GIS) in Wicked Science. We think it offers invaluable training for graduate students across the university.

Sincerely,

Mark Moritz
Professor and Chair of the Graduate Studies Committee

Graduate Interdisciplinary Specialization (GIS) in Wicked Science

Brief description of the purpose, significance, and rationale

The goal of the proposed graduate interdisciplinary specialization (GIS) is to train graduate students to become *wicked scientists* who are able to tackle the grand challenges of today and tomorrow—what are otherwise known as wicked problems. The concept of wicked problem describes a wide range of global challenges including climate change, food security, growing inequality, cyber security, and emerging infectious diseases. Wicked problems have two fundamental properties: (1) they are dynamic, complex systems with many interdependencies; and (2) stakeholders have different values, interests and conceptions of the problem and its solution [1]. Because wicked problems are complex and political, it is impossible to "solve" them.

The standard scientific approach conceptualizes problems as having straightforward technical solutions but ignoring the complexity and political dimensions of such problems has serious consequences. The accident of the Space Shuttle Columbia in 2003, for example, was not simply the result of technical malfunction, but the result of underlying organizational and cultural issues within NASA [2]. In other words, rocket science is not just an engineering problem, but a wicked problem that is highly complex and involves numerous stakeholders. And though much has been written about the challenges of such wicked problems [3, 4], this has not translated into graduate programs that train scientists to tackle these grand challenges in transdisciplinary research teams [5].

Because the most pressing problems in the world are wicked problems, it is no longer sufficient for graduate students to be experts in their respective fields. They also need to have the necessary skills to collaborate successfully with diverse teams of researchers and stakeholders. The need for graduate students with both deep disciplinary training and the transdisciplinary soft skills to tackle wicked problems has been identified in numerous reports from the National Science Foundation [6], National Academies of Sciences [7], Council of Graduate Schools [8], and organizations like Google [9]. It is for this reason that we propose a GIS in wicked science that trains students to become inclusive, transdisciplinary researchers of wicked problems.

The GIS will prepare students for a wide range of careers in and outside of academia. The goal of the Graduate Interdisciplinary Specialization in Wicked Science is to train students to become wicked scientists – researchers with the skills and attitudes to tackle wicked problems. This entails that students will be able to:

1. Tackle wicked problems using a systems-thinking approach that seriously considers the roles, interests, and perspectives of stakeholders.

2. Collaborate effectively with stakeholders and team members from diverse backgrounds and experiences.
3. Communicate scientific research and ideas to diverse audiences and through different modalities.
4. Meet ethical, collegial, and professional expectations and standards in collaborative research and other professional endeavors.
5. Articulate a sense of purpose and develop competencies, skills, and habits that prepare them for life-long learning about and engaging with wicked problems.

In short, the GIS will train students from across the university to become wicked scientists, who are able create an inclusive culture in transdisciplinary teams, which is critical for realizing what is known as the diversity bonus—the benefit teams gain from generating new ideas through the diversity of their members [10].

The training program is designed to target graduate students in departments affiliated with the Interdisciplinary Institutes at Ohio State: Sustainability Institute, Initiative for Food and Agri-Cultural Transformation, Translational Data Analytics Institute, and Infectious Diseases Institute. But the program is open to all graduate and professional students from across the university. Graduate students in programs from Anthropology to Veterinary Medicine are researching grand challenges that can be studied as wicked problems, but none of these programs trains students in the skills that are necessary to work effectively in inclusive, transdisciplinary teams, which is necessary to tackle wicked problems.

Description of the Proposed Curriculum

The curriculum consists of four required courses and a total of 10 credits (or 11 credits depending on what design / innovation course students take). Two of the courses are cross-listed across multiple departments, which allows students from any department to complete the interdisciplinary specialization.

1. ANTHROP/EEOB 5505: Wicked Science (3 credits) offered every spring

2. EEOB/ANTHROP 5510: Interdisciplinary Team Science (3 credits) every autumn

3. PUBAFRS 5620: Rapid Innovation for Public Impact (4 credits) offered every autumn and spring, or DESIGN 6400: Graduate Co-Design Studio (3 credits) every spring, or DESIGN 5650: Advanced Collaborative Design (3 credits) every spring.

4. ANTHROP 5515: Wicked Problems Capstone (1 credit), autumn and spring

Administrative arrangement for the proposed program

The program will be administered by Mark Moritz (faculty lead) and Elizabeth Healy (graduate program coordinator) in the Department of Anthropology. The faculty lead will be assisted by an advisory board that consists of four members from different departments: Alison Bennet (EEOB), Nick Kawa (anthropology), Elizabeth Newton (public policy), Fabienne Munch (design), and one graduate student (TBD).

Evidence of need and employment opportunities

Because today's most pressing problems are wicked problems, it is no longer sufficient for graduate students to be experts in their respective fields. They also need to have the necessary skills to collaborate successfully in diverse teams of researchers and other stakeholders. The need for graduate students with both deep disciplinary training and the transdisciplinary skills to tackle wicked problems has been identified in numerous reports from the National Science Foundation, National Academies of Sciences, Council of Graduate Schools, National Science & Technology Council, and organizations like Google. The cultivation of personal and professional skills is especially critical for realizing what is known as the diversity bonus—the benefit teams gain from generating new ideas through the diversity of their members.

Prospective enrollment

We anticipate that 50 to 75 graduate and undergraduate students will enroll in courses associated with the specialization and that 8 to 12 students annually will elect to complete the Graduate Interdisciplinary Specialization in Wicked Science.

In August 2020, we conducted an online survey of graduate students to assess whether they would be interested in enrolling in a wicked science program, taking the courses, and/or participating in the workshop. The survey was conducted in preparation for a proposal that we submitted to the Innovation in Graduate Education (IGE) program at the National Science Foundation in autumn 2020. While the program and course titles have changed since, the learning outcomes and the organization of the program are the same.

The survey results indicate that a majority of the 50 students who responded were interested in taking the courses *Soft Skills for Hard Problems, Transdisciplinary Problem-Solving, Hacking Wicked Problems*, or participate in the *Community of Practice* workshop (56%, 70%, 52%, and 56%) and if we include the students who responded that they *may* be interested the percentages are even higher (96%, 98%, 93%, and 91%). Asked if they would be interested in enrolling in the Graduate Interdisciplinary Specialization (GIS) in Wicked Science, 34% answered "yes" and 62% "maybe". One of the main reasons that many more students are interested in taking the individual courses rather than enroll in the graduate interdisciplinary specialization is that students indicate that they "have no time to take these courses" (41%) or "that there is no room in their program for additional courses" (19%). However, students from colleges across the university – Agriculture, Arts and Sciences, Engineering, Medicine, Nursing, Public Policy, Social Work, and Veterinary

Medicine indicated that the "courses are "interesting" (37%) and "relevant for their careers" (31%). In short, the survey indicates that there is considerable interest in the courses and the graduate interdisciplinary specialization.

Special efforts to enroll and retain underrepresented groups in the discipline

Critical to the training of wicked scientists is the development of an inclusive program at Ohio State where students from underrepresented groups feel safe to be themselves and empowered to speak out. We recognize that the university is an institution where not everyone feels safe or supported. Students who identify as women, genderqueer, Black, Indigenous, or People of Color are less likely than their peers to enroll in and complete advanced degrees in STEM fields. Isolation and tokenization, lack of respect from others in the academic community, and lack of identifiable mentors or collegial support are critical factors that discourage STEM diversity and success. To overcome institutional barriers to diversity, our program will use evidence-based practices that build and sustain a critical mass of students from underrepresented groups.

Mentorship is a critical component of the professional learning of graduate students and that is particularly true for students from groups that are underrepresented in STEM fields and for students in interdisciplinary programs without an organizational home. In other words, to support the success of all graduate students, our training program needs a comprehensive mentoring program. To facilitate mentoring relationships that promote the academic integration and professional learning of students, we will cultivate an inclusive institutional culture that provides validating experiences for all members of the academic community. We will work closely with the Office of Diversity and Inclusion and the Office of Postdoctoral Affairs, which has been the lead office at Ohio State in training faculty, postdoctoral fellows, and graduate students to become inclusive and effective mentors and mentees. The workshops they offer have been developed by the National Research Mentoring Network (NRMN), which is a nationwide consortium that provides trainees across STEM fields with evidence-based mentorship and professional learning programming. The workshops emphasize the benefits and challenges of diversity, inclusivity, and culture within mentoring relationships, and more broadly the research workforce. Staff of the Office of Postdoctoral Affairs have been trained by Knowinnovation to facilitate innovation workshops and offers team science workshops. Moreover, we will track how students from underrepresented groups are doing in our program and we will use an alumni survey to continue to engage with our alumni from underrepresented groups and support them as they face bias or discrimination as professionals. Broadening participation is critical for the success of our program because it leads to better (wicked) science, even it is not always recognized.

Program Assessment

We have developed an extensive program assessment for a proposal that has been recommended for funding from the Innovations in Graduate Education (IGE) program at the National Science Foundation. Here is a summary of our assessment plan.

There are four main ways in which we assess the performance of the program: (1) assessment of courses and course components and their effectiveness in training different core competencies; (2) an overall assessment of students' core competencies after completion of the graduate interdisciplinary specialization; (3) controlled comparison of core competencies of students enrolled in the program and those who are not; and (4) a study of the larger institutional context and how it affects student training and the program more broadly. The overarching hypothesis is that students who complete all the program components and participate in the community of practice will show improved competency development and higher scores across all measures of the program, including the four validated psychometric instruments, when compared to students who partially complete the program or do not participate at all.

Recommended courses

There are other courses that are relevant and recommended for students pursuing a career in transdisciplinary research of wicked problems. These courses do not count towards the requirements of the specialization, but they may be of interest to students who are pursuing the specialization in wicked science. This list of courses will be updated and expanded, but currently includes the following:

ACCAD 7893: Interdisciplinary Creative Research Studio (3 credits)

AEDECON 7320 Advanced Resource Economics (3 credits)

ANTHROP 8891.04 Social-Ecological Systems (3 credits)

ANTHROP 8891.05: Research Design and Ethnographic Methods (3 credits)

CIVILENG 5610.01/ FABE 5260.01 – Sustainable WaSH Infrastructure for Developing Rural Communities

DESIGN 5800.01 Industrial Design Seminar (3 credits)

DESIGN 6100 Methods and Tools for Conducting Design Research (3 credits)

HTHRHSC / PUBAFRS 7574: Mixed Methods Approaches for Policy-Related Research (3 credits)

ENGR 5797.24 Sustainable Community Development - Honduras (3 credits)

GEOG 5226 Spatial Simulation and Modeling in GIS

ISE 6300 Simulation for System Analytics and Decision-Making

MGT 7222 Simulation, Risk Analysis and Decision Making (3 credits)

PUBAFRS 7505: Wicked Policy Problems (3 credits)

LEARNING GOALS, OUTCOMES, AND PROFICIENCIES FOR WICKED SCIENTISTS

The goal of the Graduate Interdisciplinary Specialization (GIS) in Wicked Science is to train students to become wicked scientists, who have the skills and attitudes to tackle wicked problems, and this entails that students will be able to:

A. Tackle wicked problems using a systems-thinking approach that considers the roles, interests, and perspectives of stakeholders.
B. Collaborate effectively with stakeholders and team members from diverse backgrounds and experiences to tackle wicked problems.
C. Communicate effectively scientific research and ideas to diverse audiences and through different modalities.
D. Meet ethical, collegial, and professional expectations and standards in collaborative research and other professional endeavors.
E. Articulate a sense of purpose and develop habits that prepare them for life-long learning about and engaging with wicked problems.

There are three different levels: goals, outcomes, and proficiencies

A. Learning goal
1. Learning outcome
a. Proficiency (Beginner, Intermediate, Advanced)

A. Students will be able to tackle wicked problems using a systems-thinking approach that considers the roles, interests and perspectives of stakeholders.

1. Explain what wicked problems are.
    a. Explain the primary characteristics of wicked problems (B)
    b. Apply concept of wicked problems to problems that affect one's life and the lives of others. (B/I)
2. Analyze the dynamics, complexities, and interdependencies of wicked problems.
    a. Describe the complex systems that create and perpetuate wicked problems. (B/I)
    b. Analyze interdependencies and system dynamics of a wicked problem. (I)
3. Critically analyze the roles, interests, and perspectives of different stakeholders in wicked problems.
    a. Recognize stakeholders and their respective interests in and conceptions of a given wicked problem. (B)
    b. Analyze how wicked problems affect the interests of different stakeholders. (A)
4. Co-design a (research) project that tackles a wicked problem.
    a. List and prioritize research questions that will help to understand the wicked problem and its feedbacks. (B/I)
    b. Identify team members relevant to develop and answer the research questions (I)
    c. Identify questions that can be answered and questions that may only be partially answered. (A)
    d. Identify methodological approaches that can be used to collect and analyze the data to answer the questions. (A)
    e. Reflect on possible unintended consequences of intervention into the wicked problem. (A)

B. Students will effectively collaborate with stakeholders and team members from diverse backgrounds and experiences to tackle wicked problems.

1. Leverage the diversity among stakeholders to tackle wicked problems.
    a. Identify how backgrounds shape stakeholder values, interests, worldviews, and moral and ethical lenses. (B)
    b. Reflect on how personal background shapes one's own values, interests, worldviews, and moral and ethical lenses. (B)
    c. Recognize that one's own values, interests, worldviews, and moral and ethical lenses are not "normal" or "natural". (I)
    d. Appreciate diversity in knowledge, beliefs, and practices as benefits and not as deficits in tackling wicked problems. (I)
    e. Leverage diversity to imagine new and creative ways to tackle wicked problems. (A)
2. Know how to develop rapport, trust, and a sense of community in teams with stakeholders of diverse backgrounds.
    a. Participate in stakeholder events and activities. (B)
    b. Listen to stakeholder concerns and interests (I).
    c. Demonstrate curiosity and interest (I).
    d. Represent other values and perspectives with respect. (A)
3. Coordinating a (research) project that is intentionally collaborative, diverse, and equitable.
    a. Identify potential stakeholders that represent diverse backgrounds and expertise. (B)
    b. Include stakeholders in the research activity through collaboration in the project design, implementation, and evaluation. (B/I)
    c. Consider how tasks and responsibilities are administered fairly and equitably among research collaborators and participants. (I)
    d. Know how to obtain necessary permissions and approvals from research institutions and participating organizations. (I)
    e. Recognize how to leverage diverse perspectives and expertise to tackle wicked problems during all project phases. (A)

C. Students will be able to effectively communicate scientific research and ideas to diverse audiences and through different modalities.

1. Communicate research on wicked problems to academic audiences.
    a. Evaluate the different academic venues available for communicating their work. (B)
    b. Select the most appropriate academic venues for their work. (B)
    c. Use the norms and structures of academic communication. (I)
    d. Write clearly, compellingly and in appropriate formats for selected audiences. (A)
    e. Present clearly, compellingly and in appropriate formats for selected audiences. (A)
2. Explain wicked problems and the study thereof to broader audiences.
    a. Recognize that different audiences have different needs (e.g., because of age, values, interests, educational background). (B)
    b. Explain the requirements and expectations for different outlets (e.g., social media, news feeds, podcasts, photovoice, blogs). (I)
    c. Communicate research on wicked problems clearly and compellingly through different media formats to different audiences. (A)
3. Communicate research findings on wicked problems to policy makers and/or business leaders.
    a. Explain the norms and structures of communication in policy and business circles. (I)
    b. Translate research findings into options for actions by policy makers and business leaders that tackle wicked problems. (A)
    c. Present clearly, compellingly and in appropriate formats for policy makers and business leaders. (A)

D. Students will be able to meet ethical, collegial, and professional expectations and standards in collaborative research and other professional endeavors.

1. Consider moral, ethical, and professional expectations in collaborative research.
    a. Know historical ethical problems associated with studying of and wrestling with wicked problems. (B)
    b. Know ethical and professional guidelines defined by the professional associations relevant to the student's career. (I)
    c. Demonstrate an ability to reflect on ethical and moral considerations when working with stakeholders and tackling wicked problems (A).
2. Consider issues of justice, beneficence, and autonomy when conducting research with human or animal subjects.
    a. Consider how to respect human subjects, protect their autonomy, and obtain informed consent. (B)
    b. Consider and weigh the costs and benefits of the research activities for human subjects. (B)
    c. Consider how research activities are administered fairly and equally among potential research participants. (B)
    d. Obtain necessary permits, permissions, and approvals for research in a timely manner. (I)
    e. Conduct research ethically in accordance with the guidelines of professional organizations. (A)

E. Students will be able to articulate a sense of purpose and develop habits that prepare them for life-long learning about and engaging with wicked problems.

1. Plan a career in tackling wicked problems.
    a. Identify career goals and opportunities, including those in the public sector, the private sector, non-profits, or academia. (B)
    b. Formulate an individual development plan. (I)
    c. Build skills for developing and maintaining professional networks. (I)
    d. Foster collegial relationships with peers and stakeholders. (A)
2. Recognize one's motivations for tackling a given wicked problem.
    a. Articulate one's personal reasons for tackling a given wicked problem. (B)
    b. Consider how one's motivations compare with or differ from other collaborators when addressing a given wicked problem. (I)
3. Recognize individual qualities necessary to be successful in collaborative projects.
    a. Identify the habits and attributes of effective collaborators that facilitate effective group interactions. (B)
    b. Adopt and employ habits used by effective collaborators in diverse, transdisciplinary teams. (I)
    c. Seek mentorship and mentor others regarding collaborative behaviors and habits. (A)
4. Cultivate the attitude and courage for tackling wicked problems.
    a. Articulate what one does not know about a given problem. (B)
    b. Question one's own assumptions about one knows about a problem. (I)
    c. Appreciate the complexity, politics, and distinctiveness of the problem. (I)
    d. Recognize the value of wrestling with wicked problems regardless of the results. (A)
    e. Have fun. (A)

References Cited

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Wicked Science

(or Transdisciplinary Problem Solving)

ANTHROP 5505 **Autumn 2022**

Course Information

- **Course times and location:** Tuesdays and Thursdays 12:45 – 2:05 PM
- **Credit hours:** 3
- **Mode of delivery:** In person

Instructor

- **Name:** Nick Kawa
- **Email:** kawa.5@osu.edu
- **Office location:** 4030 Smith Laboratory
- **Office hours:** Tuesdays from 3 – 5 PM

- **Preferred means of communication:** email
    - My class-wide communications will be sent through the announcements tool in CarmenCanvas. Please check your notification preferences (go.osu.edu/canvas-notifications) to be sure you receive these messages.

Course Description

The goal of this course is to **train students to become wicked scientists** who are able to tackle the grand challenges of today and tomorrow—what are otherwise known as wicked problems. The concept of wicked problem describes a wide range of local, national, and global challenges including: climate change, food security, biodiversity loss, marine plastic pollution, growing inequality, cyber security, and emerging infectious diseases. Wicked problems have two fundamental properties: they are complex with many interdependencies; and stakeholders have different values, interests and conceptions of the problem and its solution. Tackling them requires the skills and attitudes of a wicked scientists. This is the idea behind this transdisciplinary course. You will learn what wicked problems are and learn strategies for tackling the politics and complexity of these problems. Rittel and Webber (1973), who developed the concept of wicked problems, note that because wicked problems are complex and political, it is impossible to “solve” them. However, we argue that when researchers are trained to consider the politics and complexity of these wicked problems, it will lead to more equitable and sustainable resolutions and outcomes.

Course Goal and Learning Outcomes

The goal of this course is **to train students to become wicked scientists who are able to tackle the grand challenges of today and tomorrow**—what are otherwise known as wicked problems. This entails that you will be able to meet the following learning outcomes.

1. **Explain what wicked problems are.**
    - Explain the primary characteristics of wicked problems.
    - Apply concept of wicked problems to a wicked problem of their interest.
2. **Analyze the dynamics, complexities, and interdependencies of wicked problems.**
    - Describe the complex systems that create and perpetuate wicked problems.
    - Analyze interdependencies and system dynamics of a wicked problem.
3. **Analyze the roles, interests and perspectives of diverse stakeholders and disciplines in wicked problems.**
    - Recognize diverse stakeholders and their respective interests in and conceptions of a given wicked problem.
    - Recognize how diverse disciplines might approach the wicked problem based upon their respective interests and conceptions
    - Analyze how wicked problems affect the interests of different stakeholders.
4. **Design a (research) project that tackles a wicked problem.**
    - List and prioritize research questions that will help to understand a wicked problem and its feedbacks.
    - Identify potential team members to develop and answer the research questions.
    - Identify questions that can be answered and ones that may be partially answered.
    - Identify and assess methodological approaches that can be used to collect and analyze the data to answer the questions.
    - Reflect on possible unintended consequences and limitations of their chosen approach in tackling their wicked problem.
5. **Leverage the diversity among stakeholders to tackle wicked problems.**
    - Reflect on how personal background shapes one's own values, interests, worldviews, and moral and ethical lenses.
    - Appreciate diversity in knowledge, beliefs, and practices as benefits and not as deficits in tackling wicked problems.
    - Leverage diversity to imagine new and creative ways to tackle wicked problems.
6. **Communicate research on wicked problems to academic audiences.**
    - Evaluate the different academic venues available for communicating their work.
    - Select the most appropriate academic venues for their work.
    - Write clearly, compellingly and in appropriate formats for selected audiences.
    - Present clearly, compellingly and in appropriate formats for selected audiences.
7. **Explain wicked problems and the study thereof to broader audiences.**
    - Recognize that different audiences have different needs.
    - Explain the requirements and expectations for different communication outlets and audiences.
    - Communicate research on wicked problems clearly and compellingly through different media formats to different audiences.

8. **Recognize one's motivations for tackling a given wicked problem.**
    - Articulate one's personal reasons for tackling a given wicked problem.
    - Consider how one's motivations compare with or differ from other collaborators when addressing a given wicked problem.

How this Course is Organized

Mode of delivery: This course is in-person and all the assignments and course materials can be found on CarmenCanvas. The course is organized in **weekly modules** in CarmenCanvas that are organized as follows:

- An **overview page** that describes the learning goals, activities in class, and homework assignments for that particular week.
- Links to required as well as recommended **readings** / **videos** / **podcasts**. Undergraduate students enrolled in the course will complete the required readings before coming to class on Tuesday. Graduate students will complete the required and the recommended readings before coming to class on Tuesday.
- In the **weekly homework assignments**, students will apply key concepts and strategies to a wicked problem that we tackle as a class. All the homework assignments will build towards designing a (research) project to tackle this wicked problem, for example, analyzing interdependencies and system dynamics of the wicked problem and analyzing the roles, interests and perspectives of stakeholders in wicked problem.
- **Addenda**: At the end of each week – before Friday midnight – you have to submit one paragraph or two (certainly no longer than one page) in which you reflect on what you learned that week from the readings, assignments, and class discussions.The goal of the addenda is for you to develop your own conceptual framework for tackling wicked problems and prepare you for the capstone assignment. There are 14 addenda and the three with the lowest score will be dropped (or you can skip three of them).

The assignments listed above – homework assignments and addenda - are due before 5 PM on Friday. The capstone assignment is due at the end of the semester.

- The **capstone assignment** is a proposal for tackling a wicked problem. The proposal builds on the weekly homework assignments and can take the form of a research or a policy proposal. Detailed instructions will be provided in CarmenCanvas. Towards the end of the semester, you will present your proposal in class to get critical feedback from your fellow students and instructor.

Expectations for graduate students.

- This course can be taken by undergraduate and graduate students. Graduate students complete all the the weekly homework assignments and addenda and together with the undergraduates will collaborate on analyzing the wicked problem that is central to the course that semester.
- As graduate students are more advanced in their studies, they are expected to mentor and support the learning of the undergraduates enrolled in class, which entails encouraging them to participate and guiding them through the activities in class.
- In addition to the required readings, graduate students will also read the recommended readings before coming to class on Tuesdays.
- In the capstone assignment, graduate students will apply key concepts and strategies to a wicked problem of their choice that pertains to their own MA or PhD research (rather than the course wicked problem). They will leverage what they learned in the weekly homework assignments towards designing a (research) project to tackle their wicked problem.

Credit hours and work expectations: This is a 3 credit-hour course. According to Ohio State bylaws on instruction (go.osu.edu/credithours), students should expect around 3 hours per week of time spent on direct instruction (instructor content and CarmenCanvas activities, for example) in addition to 6 hours of homework (reading and assignment preparation, for example) to receive a grade of C average.

How Your Grade is Calculated

Assignment Category	Percentage
Participation	10%
Addenda (14)	15%
Homework assignments (14)	50%
Capstone project	25%

Late Assignments

Due dates are set to help you stay on pace and to allow timely feedback that will help you complete subsequent assignments. You can always submit assignments late and you will never lose points for late submissions, but it is your responsibility to stay on pace. The final deadline for submitting late assignments is by the end of week 13.

Instructor Feedback and Response Time

Remember that you can call 614-688-4357 (HELP) at any time if you have a technical problem.

- **Preferred contact method:** If you have a question, please contact me first through my Ohio State email address. I will reply to emails within **24 hours on days when class is in session at the university**.
- **Class announcements:** I will send all important class-wide messages through the Announcements tool in CarmenCanvas. Please check your notification preferences (go.osu.edu/canvas-notifications) to ensure you receive these messages.
- **Grading and feedback:** For assignments submitted before the due date, I will try to provide feedback and grades within **seven days**. Assignments submitted after the due date may have reduced feedback, and grades may take longer to be posted.

Grading Scale

Final grades are based on the following grading scheme: A 93; A- 90-92; B+ 87-89; B 83-86; B- 80-82; C+ 77-79; C 73-76; C- 70-72; D+ 67-69; D 60-66; E< 60.

Course Schedule

Refer to the CarmenCanvas course for up-to-date due dates. **All the assignments** – homework assignments and addenda – **are due before midnight**.

Part I: Wicked Concepts

Week 1	**Introduction to the course**: discussion of learning outcomes, brief explanation of wicked science, discussion of why training wicked scientists is important (Ravitch and Riggan 2012; Agar 2006).
	HW1: introduce yourself and your interest in wicked problems.
Week 2	**Discussion of concept of wicked problems**: reading the original contribution by Rittel and Webber, digging deep and making sure that everyone understands the concept well (Churchman 1967; Rittel and Webber 1973).
	HW2: explain the concept and its components in your own words and illustrate each component with a short example.

Week 3	**History of the concept of wicked problems**: how has it been used in different disciplines, how has use of the concept change over time, what are the most common uses of the concept (Alford and Head 2017). **HW3**: review how the concept has been used in your discipline.
Week 4	**Use of concept in different disciplines**: how do common uses of the concept hold up against the original concept, what parts are generally included, what parts are generally excluded, and what does that tell us about conventional approaches to wicked problems (DeFries et al. 2017). **HW4**: compare an article from your discipline against the original concept.
Week 5	**Exploring wicked science**: can we translate the concept of wicked problems into wicked science, what are the attributes of wicked scientists (Kawa et al. 2021; Wade et al. 2020). **HW5**: take one or more of the components and explain what this would mean for students graduating from a wicked science program.

Part II: Wicked Strategies

Week 6	**Strategy one – how to systems-think**: what is a systems approach, what are the properties of complex systems, how to analyze complex systems (Baumgartner 2021; Liu et al 2013: Meadows 1999; Stroh 2015). **HW6**: create a visual representation of your wicked problem in which you identify the main actors, drivers, and interdependencies.
Week 7	**Strategy two – how to incorporate stakeholder perspectives**: what are stakeholders, how to identify stakeholders, how to include all stakeholders in the process (Pyrko, Dorfler, and Eden 2017; Bammer 2013; Liboiron et al 2018; Mason et al 2018). **HW7**: create a concept map with all the relevant stakeholders describing their roles, interests, and perceptions of the problem. Identify who is affected by the problem and discuss strategies to ensure their participation.

Week 8	**Strategy three – how to leverage diversity**: what are diversity, inclusion, and equity, how to create inclusive transdisciplinary teams (Philips 2017; Came and Griffith 2018; CLEAR 2020: Liboiron et al 2016). **HW8**: discuss how backgrounds shape stakeholder values, interests, and worldviews and how these perspectives help to tackle the wicked problem.
Week 9	**Strategy four – how to collaborate in teams**: what are the challenges of working in transdisciplinary teams, what strategies can be used to support effective and innovative collaborations (Bennett, Gadlin, and Levine-Finley 2018; Hall, Vogel, and Croyle 2019; Sahneh et al. 2021). **HW9**: develop a collaboration plan using a simple template.
Week 10	**Strategy five – how to act ethically**: what are some of the ethical and moral challenges that researchers in transdisciplinary teams encounter, what are some of the strategies to work through these challenges (Cockburn and Cundill 2018; Simpson 2007). **HW10**: identify potential ethical issues in your project and discuss how stakeholders may view these issues differently.
Week 11	**Strategy six – how to communicate**: what are the modalities, venues, norms, and structured for communicating with academics, general audiences, and policymakers (Baron 2010; Olson 2015). **HW11**: Record an elevator pitch in which you clearly and compellingly explain your wicked problem project to a non-academic audience, for example through blogs, podcasts, YouTube videos.
Week 12	**Strategy seven – how to keep going**: what are the careers in tackling wicked problems, what are the individual habits and qualities for long-term engagement with wicked problems (Bhasin 2017). **HW12**: Write a statement of purpose that outlines your motivations, attitudes, and habits that prepare you for long-term engagement with wicked problems.

Part III: Applying Concepts and Strategies

Week 13	**Proposal presentations**: students present their proposals and get critical feedback from students and the instructor. **HW13**: student presentations
Week 14	**Looking back and paying it forward**: synthesize what have we learned, what is missing, what should we do different next time. **HW14**: write a letter to students of next cohort with a discussion of your journey through the course and advice on how to tackle this course.
Finals week	Capstone project is due in finals week.

Required readings

All the required and recommended readings are available in CarmenCanvas.

Agar, Michael. 2006. An Ethnography By Any Other Name … *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research* 7 (4).

Alford, John, and Brian W. Head. 2017. Wicked and less wicked problems: a typology and a contingency framework. *Policy and Society* 36 (3):397-413.

Bammer, Gabriele. 2013. *Disciplining Interdisciplinarity: Integration and Implementation Sciences for Researching Complex Real-World Problems*. Canberra (Australia): Australian National University.

Baron, Nancy. 2010. *Escape From the Ivory Tower: A guide to making your science matter*. Washington DC: Island Press.

Baumgartner, Jeffrey. *The Basics of Creative Problem Solving - CPS*. Innovation Management 2021 cited September 2, 2021. Available from https://innovationmanagement.se/2010/06/02/the-basics-of-creative-problem-solving-cps/.

Bennett, L. M., H. Gadlin, and S. Levine-Finley. 2018. Collaboration and team science: A field guide. Bethesda (MD): National Institutes of Health.

Bhasin, Ritu. 2017. *Authenticity Principle: Resist Conformity, Embrace Differences, and Transform How You Live, Work, and Lead*. Toronto (Canada): Melanin Made Press.

Came, H., and D. Griffith. 2018. Tackling racism as a "wicked" public health problem: Enabling allies in anti-racism praxis. *Social Science and Medicine* 199:181-188.

Churchman, C. West. 1967. Guest Editorial: Wicked Problems. *Management Science* 14 (4):B141-B142.

Civic Laboratory for Environmental Action Research (CLEAR). 2020. Civic Laboratory for Environmental Action Research (CLEAR) Lab Book: A living manual of our values, guidelines, and protocols.

Cockburn, Jessica, and Georgina Cundill. 2018. Ethics in Transdisciplinary Research: Reflections on the Implications of 'Science with Society'. In *The Palgrave Handbook of Ethics in Critical Research*, edited by C. I. Macleod, J. Marx, P. Mnyaka and G. J. Treharne: Springer Verlag.

DeFries, R., and H. Nagendra. 2017. Ecosystem management as a wicked problem. *Science* 356 (6335):265-270.

Hall, Kara L., Amanda L. Vogel, and Robert T. Croyle, eds. 2019. *Strategies for Team Science Success: Handbook of Evidence-Based Principles for Cross-Disciplinary Science and Practical Lessons Learned from Health Researchers*. Cham (Switzerland): Springer Nature.

Kawa, Nicholas C., Mark Anthony Arceño, Ryan Goeckner, Chelsea E. Hunter, Steven J. Rhue, Shane A. Scaggs, Matthew E. Biwer, Sean S. Downey, Julie S. Field, Kristen Gremillion, Joy McCorriston, Anna Willow, Elizabeth Newton, and Mark Moritz. 2021. Training wicked scientists for a world of wicked problems. *Humanities and Social Sciences Communications* 8 (1).

Liboiron, Max, Alex Zahara, and Ignace Schoot. 2018. Community Peer Review: A Method to Bring Consent and Self-Determination into the Sciences. *Preprints*.

Liboiron, Max, France Liboiron, Emily Wells, Natalie Richárd, Alexander Zahara, Charles Mather, Hillary Bradshaw, and Judyannet Murichi. 2016. Low plastic ingestion rate in Atlantic cod (Gadus morhua) from Newfoundland destined for human consumption collected through citizen science methods. *Marine Pollution Bulletin* 113 (1):428-437.

Liu, Jianguo, Vanessa Hull, Mateus Batistella, Ruth DeFries, Thomas Dietz, Feng Fu, Thomas W. Hertel, R. Cesar Izaurralde, Eric F. Lambin, Shuxin Li, Luiz A. Martinelli, William J. McConnell, Emilio F. Moran, Rosamond Naylor, Zhiyun Ouyang, Karen R. Polenske, Anette Reenberg, Gilberto de Miranda Rocha, Cynthia S. Simmons, Peter H. Verburg, Peter M. Vitousek, Fusuo Zhang, and Chunquan Zhu. 2013. Framing Sustainability in a Telecoupled World. *Ecology and Society* 18 (2).

Mason, Tom H. E., Chris R. J. Pollard, Deepthi Chimalakonda, Angela M. Guerrero, Catherine Kerr-Smith, Sergio A. G. Milheiras, Michaela Roberts, Paul Rodrigue, and Nils Bunnefeld.

2018. Wicked conflict: Using wicked problem thinking for holistic management of conservation conflict. *Conservation Letters* 11 (6):e12460.

Meadows, Donella. 1999. *Leverage Points: Places to intervene in a system*. Hartland (VT): The Sustainability Institute.

Olson, Randy. 2015. *Houston, We Have a Narrative - Why Science Needs Story*. Chicago: University of Chicago Press.

Philips, Katherine W. 2017. What is the real value of diversity in organizations? Questioning our assumptions. In *The diversity bonus: How great teams pay off in the knowledge economy*, edited by S. E. Page. Princeton (NJ): Princeton University Press.

Pyrko, I., V. Dorfler, and C. Eden. 2017. Thinking together: What makes Communities of Practice work? *Human Relations* 70 (4):389-409.

Ravitch, Sharon M., and Matthew Riggan. 2012. *Reason & Rigor: How conceptual frameworks guide research*. Los Angeles (CA): Sage.

Rittel, Horst W. J., and Melvin M. Webber. 1973. Dilemmas in a general theory of planning. *Policy Sciences* 4:155-169.

Sahneh, F., M. A. Balk, M. Kisley, C. K. Chan, M. Fox, B. Nord, E. Lyons, T. Swetnam, D. Huppenkothen, W. Sutherland, R. L. Walls, D. P. Quinn, T. Tarin, D. LeBauer, D. Ribes, D. P. Birnie, 3rd, C. Lushbough, E. Carr, G. Nearing, J. Fischer, K. Tyle, L. Carrasco, M. Lang, P. W. Rose, R. R. Rushforth, S. Roy, T. Matheson, T. Lee, C. T. Brown, T. K. Teal, M. Papes, S. Kobourov, and N. Merchant. 2021. Ten simple rules to cultivate transdisciplinary collaboration in data science. *PLoS Computational Biology* 17 (5):e1008879.

Simpson, Audra. 2007. On Ethnographic Refusal: Indigeneity, ‘Voice’ and Colonial Citizenship. *Junctures* 9:67-80.

Stroh, David Peter. 2015. *Systems thinking for social change*. White River Junction (VT): Chelsea Green Publishers.

Wade, A.A., A. Grant, S. Karasaki, R. Smoak, D. Cwiertny, A.C. Wilcox, L. Yung, K. Sleeper, and A. Anandhi. 2020. Developing leaders to tackle wicked problems at the nexus of food, energy, and water systems. *Elementa - Science of the Anthropocene* 8 (1):11.

Required Equipment

- **Computer:** current Mac (MacOS) or PC (Windows 10) with high-speed internet connection
- **Other:** a mobile device (smartphone or tablet) to use for BuckeyePass authentication

If you do not have access to the technology you need to succeed in this class, review options for technology and internet access at go.osu.edu/student-tech-access.

CarmenCanvas Access

You will need to use BuckeyePass (buckeyepass.osu.edu) multi-factor authentication to access your courses in CarmenCanvas. To ensure that you are able to connect to CarmenCanvas at all times, it is recommended that you do each of the following:

- Register multiple devices in case something happens to your primary device. Visit the BuckeyePass - Adding a Device (go.osu.edu/add-device) help article for step-by-step instructions.
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click **Enter a Passcode** and then click the **Text me new codes** button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Install the Duo Mobile application (go.osu.edu/install-duo) on all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357 (HELP) and IT support staff will work out a solution with you.

Technology Skills Needed for this Course

- Basic computer and web-browsing skills
- Navigating CarmenCanvas (go.osu.edu/canvasstudent)
- CarmenZoom virtual meetings (go.osu.edu/zoom-meetings)

Technology Support

For help with your password, university email, CarmenCanvas, or any other technology issues, questions or requests, contact the IT Service Desk, which offers 24-hour support, seven days a week.

- **Self Service and Chat**: go.osu.edu/it
- **Phone:** 614-688-4357 (HELP)
- **Email:** servicedesk@osu.edu

Other Course Policies

Discussion and Communication Guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style**: While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. A more conversational tone is fine for non-academic topics.
- **Tone and civility**: Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online. I will provide specific guidance for discussions on controversial or personal topics.
- **Citing your sources**: When we have academic discussions, please cite your sources to back up what you say. For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.
- **Backing up your work**: Consider composing your academic posts in a word processor, where you can save your work, and then copying into the CarmenCanvas discussion.

Academic Integrity Policy

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the university's Code of Student Conduct (studentconduct.osu.edu), and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the university's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the university or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the university's *Code of Student Conduct* is never considered an excuse for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the university's Code of Student

Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university.
If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- Committee on Academic Misconduct (go.osu.edu/coam)
- Ten Suggestions for Preserving Academic Integrity (go.osu.edu/ten-suggestions)
- Eight Cardinal Rules of Academic Integrity (go.osu.edu/cardinal-rules)

Student Well-Being

The well-being of students is of primary importance. If you are facing any challenges related to your physical or mental health, or obstacles like food or housing insecurity, please do not hesitate to get in touch to discuss ways we can put you in the best possible position to succeed.

Creating an Environment Free from Harassment, Discrimination, and Sexual Misconduct

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

1. Online reporting form at equity.osu.edu,
2. Call 614-247-5838 or TTY 614-688-8605,
3. Or email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university

employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

Your Mental Health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. No matter where you are engaged in distance learning, The Ohio State University's Student Life Counseling and Consultation Service (CCS) is here to support you. If you find yourself feeling isolated, anxious or overwhelmed, on-demand mental health resources (go.osu.edu/ccsondemand) are available. You can reach an on-call counselor when CCS is closed at 614- 292-5766**. 24-hour emergency help** is available through the National Suicide Prevention Lifeline website (suicidepreventionlifeline.org) or by calling 1-800-273-8255(TALK). The Ohio State Wellness app (go.osu.edu/wellnessapp) is also a great resource.

Accessibility Accommodations for Students with Disabilities

The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability including mental health, chronic or temporary medical conditions, please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services (SLDS). After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services.

Disability Services Contact Information

- Phone: 614-292-3307

- Website: slds.osu.edu
- Email: slds@osu.edu
- In person: Baker Hall 098, 113 W. 12th Avenue

Accessibility of Course Technology

This online course requires use of CarmenCanvas (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations as early as possible.

- CarmenCanvas accessibility (go.osu.edu/canvas-accessibility)
- Streaming audio and video
- CarmenZoom accessibility (go.osu.edu/zoom-accessibility)

Interdisciplinary Team Science

EEOB 5510 **Autumn 2022**

Course Information

- **Course times and location:** Tuesdays and Thursdays 12:45 – 2:05 PM
- **Credit hours:** 3
- **Mode of delivery:** In person
- **Communication:** Class-wide communications will be sent through the Announcements tool in CarmenCanvas. Please check your notification preferences to be sure you receive these messages.

Instructor

- **Name:** Alison Bennett
- **Email:** bennett.1242@osu.edu
- **Office location:** 386 Aronoff Laboratory
- **Office hours:** By appointment
- **Preferred means of communication:** email

Course Description

The goal of this course is to teach students the skills to effectively collaborate in interdisciplinary teams. Funding agencies worldwide, including the NSF, are placing greater emphasis on interdisciplinary research. For example, the NSF has identified “Growing Convergence Research” as one of its 10 Big Ideas. True convergence research requires the development of interdisciplinary scientific teams (groups of two or more working collaboratively to solve a problem). However, graduate students are often siloed within programs, and not necessarily trained to engage with others outside their field. This course aims to teach students the necessary skills to lead and participate in scientific or interdisciplinary teams.

Course Goal and Learning Outcomes

The goal of this course is **to train graduate students the skills to effectively collaborate in interdisciplinary teams**. This entails that students will be able to meet the following learning outcomes.

1. **Be familiar with the science of team science.**
    - Explain the main objectives and concepts of team science
    - Describe the history of team science and the science of team science
    - Explain the challenges and opportunities of team science
    - Appreciate how a team science approach can improve interdisciplinary teams.

2. **Know the best practices for building and leading interdisciplinary teams.**
    - Locate resources for best practices in team science
    - Articulate the traits of successful interdisciplinary teams
    - Describe the stages of team formation and steps in building successful teams
    - Describe the key leadership skills useful in interdisciplinary teams

3. **Communicate effectively within interdisciplinary teams.**
    - Recognize how disciplinary and personal backgrounds shape how team members approach the team project.
    - Reflect on how one's own disciplinary and personal background shapes one's own approach to the team project.
    - Explain clearly key concepts and methods from one's own discipline to team members from other disciplines.
    - Ask for clairifications from other team members when concepts and methods from other disciplines are not clear or familiar.
    - Check for agreement on key concepts and methods used in the team project to ensure a shared understanding.
    - Appreciate diversity in disciplinary and personal backgrounds and how they contribute to the team project.

4. **Recognize individual qualities necessary to be successful in interdisciplinary team science.**
    - Identify the habits and attributes of effective collaborators that facilitate effective group interactions.
    - Adopt and employ habits used by effective collaborators in diverse, transdisciplinary teams.
    - Reflect on one's strengths in collaborative competencies and identify the ones that need further development.
    - Seek mentorship and mentor others regarding collaborative behaviors and habits.

5. **Build an interdisciplinary team that is intentionally collaborative, diverse, equitable, and inclusive.**
    - Identify potential team members that represent diverse backgrounds and expertise.
    - Include team members in the research activity through collaboration in the project design, implementation, and evaluation.
    - Consider how tasks and responsibilities are administered fairly and equitably among research collaborators and participants.
    - Recognize how to leverage diverse perspectives and expertise during all project phases.
    - Create trust in interdisciplinary teams by participating in activities, listening to others, demonstrating interest, and representing other perspectives with respect.

6. **Create a collaboration plan for an interdisciplinary team.**
    - Formulate a team vision, mission, and objectives.
    - Describe the roles and responsibilities of the team members.
    - Describe the management processes for decision-making and conflict resolution
    - Identify the communication technologies used to support team functioning
    - Identify potential outputs, including authorship and attribution policies
    - Develop a plan for implementation and maintenance of the collaboration plan

How This Course Works

This course is organized in two main sections. The first section covers the four overarching themes of the course: outcomes, diversity, communication, and leadership. The second section covers team formation, functioning, and maintenance.

The **weekly modules** in CarmenCanvas are organized as follows:

- An **overview page** that describes the learning goals and activities for that particular week.
- Links to required and recommended **readings** / **videos** / **podcasts**.
- **Addenda**: At the end of every week – before Friday midnight – you have to submit a paragraph or two (certainly no longer than one page) in which you reflect on what you learned that week from the guests, readings, assignments, and discussions. The goal of the addenda is for you to develop your own conceptual framework of interdisciplinary team science.There will be 14 addenda (and you can skip two of them).
- **Homework assignments**: There are different types of weekly homework assignments, that help you explore, develop, practice, and reflect on your interdisciplinary team skills:
    - **Pyschometric assessments (PA)**: There will be a three psychometric assessments, including a motivation (MATRICx), problem-solving (FourSight), and leadership LENA) assessment, that give you better insight in your motivations and competencies for interdisciplinary team science.
    - **Collaboration plan sections (CP)**: There will be seven weekly homework assignments in which you develop the first draft of the collaboration plan including: (1) team vision, mission, and objectives; (2) team outputs; (3) people, roles, and responsibilities; (4) team culture; (5) team processes and functioning; (6) project management and infrastructure; and (7) implementation and maintenance of the collaboration plan
    - **Reflection essays (RE)**: There are three two-page essays focused on key themes in the course, including (1) diversity, equity, and inclusion; (2) leadership; and (3) future career as interdisciplinary researcher.
- **Collaboration plan**: The capstone assignment is a collaboration plan for your (current or future) interdisciplinary science team with the following sections: (1) team vision, mission, and objectives; (2) people, roles, and responsibilities; (3) team outputs; (4) team culture; (5) team processes and functioning; (6) project management and infrastructure; and (7) implementation and maintenance of the collaboration plan. Detailed instructions will be provided in CarmenCanvas.

Expectations for graduate students.

- This course can be taken by undergraduate and graduate students. Graduate students complete all the weekly homework assignments and addenda.
- As graduate students are more advanced in their studies, they are expected to mentor and support the learning of the undergraduates enrolled in class, which entails encouraging them to participate and guiding them through the activities in class.
- In addition to the required readings, graduate students will also read recommended readings before coming to class on Tuesdays.
- In the capstone assignment, graduate students will write a collaboration plan for the current research team or for the team that they would like to lead in the future. Undergraduates will write a collaboration plan for group work in one of their classes.

Credit hours and work expectations: This is a 3 credit-hour course. According to Ohio State bylaws on instruction (go.osu.edu/credithours), students should expect around 3 hours per week of time spent on direct instruction (instructor content and Carmen activities, for example) in addition to 6 hours of homework (reading and assignment preparation, for example) to receive a grade of C average.

Course Materials

All required and recommended readings and course materials will be made available in CarmenCanvas course.

How Your Grade is Calculated

Assignment Category	Percentage
Participation	15%
Addenda	15%
Homework assignments	35%
Collaboration plan	35%
Total	100%

See Course Schedule for due dates.

Late Assignments

Please refer to CarmenCanvas for due dates. Due dates are set to help you stay on pace and to allow timely feedback that will help you complete subsequent assignments.

Grading Scale

Final grades are based on the following grading scheme: A 93; A- 90-92; B+ 87-89; B 83-86; B- 80-82; C+ 77-79; C 73-76; C- 70-72; D+ 67-69; D 60-66; E< 60.

Course Schedule

Refer to the CarmenCanvas course for up-to-date due dates. **All the assignments are due before midnight**.

Week	Topic	Assignments
1	Introduction	HW1: motivation assessment (PA1)
2	Theme1: Communication	HW2: vision, mission, objectives (CP1)
3	Theme 2: Outcomes	HW3: team outputs (CP2)
4	Theme 3: Diversity	HW4: DEI reflection essay (RE1)
5	Theme 4: Leadership	HW5: leadership assessment (PA2)
6	Building teams I	HW6: people, roles, responsibilities (CP3)
7	Building teams II	HW7: problem-solving assessment (PA3)
8	Team stages	HW8: team culture (CP4)
9	Collaboration plans I	HW9: processes, functioning (CP5)
10	Collaboration plans II	HW10: leadership reflection essay (RE2)
11	Conflict resolution I	HW11: management, infrastructure (CP6)
12	Conflict resolution II	HW12: implementation, maintenance (CP7)
13	Collaborations outside academia	HW13: team science elevator pitch
14	Assessment	HW14: career reflection essay (RE3)
Finals		Capstone: Collaboration plan

Required readings

All the required readings are available in weekly modules in CarmenCanvas.

Bennett, L. M., H. Gadlin, and S. Levine-Finley. 2018. Collaboration and team science: A field guide. Bethesda (MD): National Institutes of Health.

Cooke, Nancy J., and Margaret L. Hilton, eds. 2015. *Enhancing the Effectiveness of Team Science*. Edited by Committee on the Science of Team Science, C. Board on Behavioral, and Sensory Sciences, , Division of Behavioral and Social Sciences and Education and National Research Council. Washington DC: National Academies Press.

Currie, Margaret, Christopher (Kit) J. A. Macleod, Annemarieke de Bruin, Carly Maynard, Gabriele Bammer, Laura Meagher, Alister Scott, Mark Reed, and Colin Campbell. 2016. Working together for better outcomes: good practice for interdisciplinary researchers. In *Working Together for Better Outcomes*. Edinburgh, UK.

DeHart, Dana. 2019. Team science: A qualitative study of benefits, challenges, and lessons learned. *The Social Science Journal* 54 (4):458-467.

Graef, Dana J., Jonathan G. Kramer, and Nicole Motzer. 2021. Facilitating Interdisciplinary Meetings: A Practical Guide. Annapolis, MD: National Socio-Environmental Synthesis Center (SESYNC).

Hall, Kara L., Kevin Crowston, and Amanda L. Vogel. 2014. How to Write a Collaboration Plan.

Hall, K. L., A. L. Vogel, G. C. Huang, K. J. Serrano, E. L. Rice, S. P. Tsakraklides, and S. M. Fiore. 2018. The science of team science: A review of the empirical evidence and research gaps on collaboration in science. *Am Psychol* 73 (4):532-548.

Hall, Kara L., Amanda L. Vogel, and Robert T. Croyle, eds. 2019. *Strategies for Team Science Success: Handbook of Evidence-Based Principles for Cross-Disciplinary Science and Practical Lessons Learned from Health Researchers*. Cham (Switzerland): Springer Nature.

Hardavella, G., A. Aamli-Gaagnat, N. Saad, I. Rousalova, and K. B. Sreter. 2017. How to give and receive feedback effectively. *Breathe (Sheff)* 13 (4):327-333.

Harro, B. 2000. The Cycle of Socialization. In Readings for Diversity and Social Justice, edited by M. Adams: Routledge.

Lotrecchiano, G. R., T. R. Mallinson, T. Leblanc-Beaudoin, L. S. Schwartz, D. Lazar, and H. J. Falk-Krzesinski. 2016. Individual motivation and threat indicators of collaboration readiness in scientific knowledge producing teams: a scoping review and domain analysis. *Heliyon* 2 (5).

Lotrecchiano, G. R., L. Schwartz, and H. J. Falk-Krzesinski. 2020. Measuring motivation for team science collaboration in health teams. *J Clin Transl Sci* 5 (1):e84.

Mariotti, Sergio. 2021. A new alliance between the natural and human sciences. In Integration and implementation insights.

Mojica Rey, Camille. 2008. Team Science and the Diversity Advantage. Science.

Philips, Katherine W. 2017. What is the real value of diversity in organizations? Questioning our assumptions. In *The diversity bonus: How great teams pay off in the knowledge economy*, edited by S. E. Page. Princeton (NJ): Princeton University Press.

Rolland, B., and J. D. Potter. 2017. On the Facilitation of Collaborative Research: Enter Stage Left, the Consortium Director. *Cancer Epidemiol Biomarkers Prev* 26 (11):1581-1582.

Smith-Doerr, Laurel, Sharla N. Alegria, and Timothy Sacco. 2017. How Diversity Matters in the US Science and Engineering Workforce: A Critical Review Considering Integration in Teams, Fields, and Organizational Contexts. *Engaging Science, Technology, and Society* 3.

Tuckman, Bruce W. 1965. Developmental sequence in small groups. Psychological Bulletin 63 (6):384-399.

Wolfe, A. D., K. B. Hoang, and S. F. Denniston. 2018. Teaching Conflict Resolution in Medicine: Lessons From Business, Diplomacy, and Theatre. *MedEdPORTAL* 14:10672.

Zeng, A., Y. Fan, Z. Di, Y. Wang, and S. Havlin. 2021. Fresh teams are associated with original and multidisciplinary research. *Nature Human Behavior* x (x):xx-xxx.

Instructor Feedback and Response Time

Remember that you can call 614-688-4357 (HELP) at any time if you have a technical problem.

- **Preferred contact method:** If you have a question, please contact me first through my Ohio State email address. I will reply to emails within **48 hours during week days when class is in session at the university**.
- **Grading and feedback:** For assignments submitted before the due date, I will try to provide feedback and grades within **seven days**. Assignments submitted after the due date may have reduced feedback, and grades may take longer to be posted.

Required Equipment

- **Computer:** current Mac (MacOS) or PC (Windows 10) with high-speed internet connection
- **Other:** a mobile device (smartphone or tablet) to use for BuckeyePass authentication

If you do not have access to the technology you need to succeed in this class, review options for technology and internet access at go.osu.edu/student-tech-access.

CarmenCanvas Access

You will need to use BuckeyePass (buckeyepass.osu.edu) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you do each of the following:

- Register multiple devices in case something happens to your primary device. Visit the BuckeyePass - Adding a Device (go.osu.edu/add-device) help article for step-by-step instructions.
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click **Enter a Passcode** and then click the **Text me new codes** button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Install the Duo Mobile application (go.osu.edu/install-duo) on all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357 (HELP) and IT support staff will work out a solution with you.

Technology Skills Needed for this Course

- Basic computer and web-browsing skills
- Navigating CarmenCanvas (go.osu.edu/canvasstudent)

- CarmenZoom virtual meetings (go.osu.edu/zoom-meetings)

Technology Support

For help with your password, university email, CarmenCanvas, or any other technology issues, questions or requests, contact the IT Service Desk, which offers 24-hour support, seven days a week.

- **Self Service and Chat**: go.osu.edu/it
- **Phone:** 614-688-4357 (HELP)
- **Email:** servicedesk@osu.edu

Other Course Policies

Land Acknowledgement

the Ohio State University acknowledges that its campuses have long served as sites of meeting and exchange for Indigenous peoples, including those in historical times known as the Shawnee, Potawatomi, Miami, Wyandotte, Delaware, and the People of Fort Ancient, Hopewell, and Adena cultures also known as the earthworks builders, as well as other tribal nations of the region. The Ohio State University resides on land ceded in the 1795 Treaty of Greeneville and the forced removal of tribes through the Indian Removal Act of 1830. I honor the resiliency of these tribal nations and recognize the historical contexts that has and continues to affect the Indigenous people of this land. *In addition, we acknowledge that over 614,000 acres of traditional Indigenous Peoples land were purchased, seized, or stolen by the U.S. Congress following the 1862 Morrill Land Grant Act. These lands produced a 10-fold profit for the development of United States public institutions, from which The Ohio State University was made possible in 1870.* *https://www.landgrabu.org/universities/ohio-state-university*

Discussion and Communication Guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style**: While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. A more conversational tone is fine for non-academic topics.
- **Tone and civility**: Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online. I will provide specific guidance for discussions on controversial or personal topics.
- **Citing your sources**: When we have academic discussions, please cite your sources to back up what you say. For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.
- **Backing up your work**: Consider composing your academic posts in a word processor, where you can save your work, and then copying into the CarmenCanvas discussion.

Academic Integrity Policy

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the university's Code of Student Conduct (studentconduct.osu.edu), and that all students will complete all academic and scholarly assignments with fairness and

honesty. Students must recognize that failure to follow the rules and guidelines established in the university's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the university or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the university's *Code of Student Conduct* is never considered an excuse for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the university's Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university.
If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- Committee on Academic Misconduct (go.osu.edu/coam)
- Ten Suggestions for Preserving Academic Integrity (go.osu.edu/ten-suggestions)
- Eight Cardinal Rules of Academic Integrity (go.osu.edu/cardinal-rules)

Copyright Disclaimer

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Student Well-Being

The well-being of students is of primary importance. If you are facing any challenges related to your physical or mental health, or obstacles like food or housing insecurity, please do not hesitate to get in touch to discuss ways we can put you in the best possible position to succeed.

Title IX Statement

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

1. Online reporting form at equity.osu.edu,
2. Call 614-247-5838 or TTY 614-688-8605,
3. Or email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. any human resource professional (HRP); 2. anyone who supervises faculty, staff, students, or volunteers; 3. chair/director; and 4. faculty member.

Your Mental Health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. No matter where you are engaged in distance learning, The Ohio State University's Student Life Counseling and Consultation Service (CCS) is here to support you. If you find yourself feeling isolated, anxious or overwhelmed, on-demand mental health resources (go.osu.edu/ccsondemand) are available. You can reach an on-call counselor when CCS is

closed at 614- 292-5766**. 24-hour emergency help** is available through the National Suicide Prevention Lifeline website (suicidepreventionlifeline.org) or by calling 1-800-273-8255(TALK). The Ohio State Wellness app (go.osu.edu/wellnessapp) is also a great resource.

Accessibility Accommodations

The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability including mental health, chronic or temporary medical conditions, please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services (SLDS). After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services.

Disability Services Contact Information

- Phone: 614-292-3307
- Website: slds.osu.edu
- Email: slds@osu.edu
- In person: Baker Hall 098, 113 W. 12th Avenue

Accessibility of Course Technology

This online course requires use of CarmenCanvas (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations as early as possible.

- CarmenCanvas accessibility (go.osu.edu/canvas-accessibility)
- Streaming audio and video
- CarmenZoom accessibility (go.osu.edu/zoom-accessibility)

THE OHIO STATE UNIVERSITY
JOHN GLENN COLLEGE OF PUBLIC AFFAIRS

THE OHIO STATE UNIVERSITY
BATTELLE CENTER FOR SCIENCE, ENGINEERING, AND PUBLIC POLICY

Fall 2021 Syllabus: Rapid Innovation for Public Impact

PUBAFRS 5620 Part of the *Science and Engineering in the Public Interest* program

INSTRUCTORS:

Dr. Elizabeth K. Newton
(newton.387@osu.edu; 256-653-1310)
+1 (614) 247-6618
240B Page Hall
Office hours: Wed. 4-6pm
or by appointment

USAF Colonel (ret) Kevin Cullen
(cullen.127@osu.edu)
Office hours: Wed. 11am-1pm
or by appointment

Course Coordinator:
Ethan Rivera (rivera.154@osu.edu)

In-person Class Fridays 12:00-3:00 p.m. 4 credits

Course Description

The *Rapid Innovation for Public Impact* course is a multi-disciplinary capstone or hands-on applications course in which student teams tackle real, contemporary, complex problems sponsored by government or non-profit agencies. Its goal is to produce solutions that are technically feasible, desirable from stakeholders' perspectives, and viable for adoption and integration. Following a systematic methodology, student teams develop minimum viable products (MVP) or proofs-of-concept through intensive customer discovery and agile design, development, and testing with customers and stakeholders. Students acquire an in-depth understanding of and experience in systematic innovation, refining problem-statements, engaging customers and stakeholders, navigating public sector organizations, budgeting, and management issues. Since the course delivery is designed to simulate the uncertainty and dynamism of the 'real world', students practice foundational professional skills throughout the semester such as: systems-thinking; applied critical thinking; creativity; collaboration; communication; and cultural competence. Teams invest significant time: interacting with professionals outside the classroom; engaging weekly with instructors, sponsors, and mentors; preparing written status-reports; and presenting weekly to the teaching team, sponsors, mentors, peers, and guests for critiques which emulate briefings to management or investors. Students acquire not only tools and leadership skills but an innovation mindset and exposure to a vast array of careers in the public sector.

All upper level undergraduate and graduate students in any major or college are welcome because complex problem-solving requires interdisciplinary approaches.

The *Rapid Innovation for Public Impact* course sometimes leverages OSU Battelle Center's relationship with the U.S. Department of Defense's National Security Innovation Network (NSIN), which sustains a limited network of universities offering *Hacking for Defense*™ (H4D) problems.

Student Learning Objectives

The class is an intense professional experience for 4 credits. Students should expect to spend up to 12 hours/week during class time and outside of class time. This course is designed to provide students with hands-on experience understanding and working with federal, state, and local public sector agencies or nonprofits on real, current problems. In so doing, the students help organizations better address their missions and emerging threats, challenges, and opportunities. The course provides students with human-centered design and Innovation tools to solve complex problems and grow as young professionals.

Our goal, within the constraints of a course and a limited amount of time during a semester, is to provide a framework for testing students' hypotheses in order to design solutions, while emulating all of the pressures and demands of the real world in early-stage innovation. The intent is for urgency and good-enough decision-making to become ingrained. Students learn how to work and collaborate on a team, handle uncertain and chaotic environments, and turn a creative idea into a solution for a real-world complex problem that is challenging a government or nonprofit agency. Students learn how to interview a wide range of stakeholders (customer discovery), practice evidence-based innovation (human-centered design and agile development), and use a business model tool to validate the solution's viability. Students 'get out of the classroom' to see whether anyone other than them would want or use the solution.

At the conclusion of this course, students will possess a deep understanding of complex problems in the public sector. Specifically, students will demonstrate:

1. An understanding of the public sector and its dynamics
2. A profound understanding of the assigned sponsor's and beneficiary's needs, problem, and workflow, and an ability to clarify the problem-statement
3. Rapid iteration or agile development of products or solutions that are technically feasible, desirable, and viable in an economic and organizational sense.
4. An understanding of all relevant customers, stakeholders, deployment issues, costs, resources, and ultimate value of the minimum viable solution.
5. A facility with complex problem-solving methodology and innovation tools, valuable throughout a professional career.

Participating public sector agencies or other groups *may* after the course's end provide follow-on funding to student teams to refine preliminary solutions further, but this course is <u>not</u> a product incubator nor an entrepreneurship, venture-creation, or business planning course.

Course Requirements

Rigorous class preparation includes students investing consistently some small amount of time on an almost daily basis, like professionals would. Taking written notes during Class, Office Hours, Interviews, and other Feedback sessions is highly recommended. A course handout details the suggested time-budget for a typical week in order to keep the workload reasonable and in-line with the number of course credit-hours. Student responsibilities include:

1. Watching assigned videos online and completing any required readings listed in the course website
2. Interviewing (either individually or as a team) an average of 2 stakeholders/week in order to test hypotheses about the problem and potential solutions.
3. Participating in one weekly *mandatory* consultation (office hour) to review findings and identify obstacles, alternately with instructors or with mentors and sponsors.
4. Preparing a team briefing to be presented approximately every other Friday's class with updates

on the solution design and development and other topics described in the course website. Briefings are no less than 8 minutes and no more than 10 minutes in length.

5. Posting a brief status report summarizing the week's hypothesis-testing and progress in order to update the sponsors and instructors.
6. Attending ALL classes, briefing the team presentation, providing critical peer-feedback to other teams, and formulating hypotheses and interview strategy for the coming week.

By the semester's end:

- Each team conducts many dozen quality stakeholder interviews.
- Each team delivers a final video (not to exceed 2 minutes), presentation (not to exceed 10 minutes), and written report (no fewer than 3 pages and no more than 5 pages, excluding cover page, references, and appendices) concerning the solution developed to meet the sponsor's needs.
- Graduate students deliver individually a brief, additional personal reflections paper.

Student Assessment

This course is interdisciplinary and team-based, therefore 70% of a student's final grade will come from the team's performance. Teammates will help assess individual contributions. **Graduate students will be graded to a more rigorous standard and will have an additional two-page written assignment to be delivered before end of semester.** The grading policy appears on page 8. Stoplight Assessments (ungraded) will be given 4 times during the semester so that students understand their performance leading up to the final deliverables.

40% **Team's final video, presentation, and written report**

30% **Team's Weekly Performance** evident in:

- **Oral Presentation quality**, demonstrating critical thinking, communication skills, learning, and creativity.
- **Written Report quality**, demonstrating information-synthesis, critical thinking, and communication skills.
- **Effort to 'get out of the building' for customer discovery or validation,** demonstrating customer-focus, curiosity, hypothesis-formulation and -testing, and applied critical thinking.

30% **Individual's Engagement** reflected in:

- **Teammates' evaluation** of individual's contributions, reflecting trustworthiness and collaboration skills
- **Class Participation** demonstrating active listening and attentiveness, commitment to team, and perseverance.

Required Texts: Students can access textbook information via the Barnes & Noble bookstore website: https://ohiostate.bncollege.com as well as from their BuckeyeLink Student Center. This information is disseminated by B&N to all area bookstores. You may buy from a store of your choice and/or shop for books (always use ISBN# for searches) online.

- IDEO, ***The Field Guide to Human-Centered Design***, 1st edition 2015. Free digital download at: http://www.designkit.org/resources/1?utm_medium=ApproachPage&utm_source=www.ideo.org&utm_campaign=FGButton
- Constable & Rimalovski, ***Talking to Humans – Success Starts With Understanding Your Customers.*** Free digital download for non-profits/schools at: https://www.talkingtohumans.com/download.html or Paperback: 88 pages Publisher: Giff Constable (September 23, 2014) ISBN-13: 978-0990800927
- Osterwalder and Pigneur, [VPD] *Value Proposition Design – How to Create Products and Services Customers Want* Paperback: Publisher: Wiley ISBN-13: 978-1118968055

Course Schedule Overview **See detailed instructions in Carmen/Navigator.**

Class	Date	Friday class			Friday -through- Thursday	Wednesday	Thursday
		Hour 1	Hour 2	Hour 3			
I. Phase: Discovery							
1	Aug 27	**Instructors**: Orientation	***Lunch with Sponsor:*** *Sponsor Discovery*	**Teams**: Initial Discovery Presentation (5min) *Team Scheduling*	8/27-9/2: Find & read 5 sources/student about your problem and sponsor & summarize 'bottom lines' from the sources in team Slack channel Interview Sponsor(s), Mentors, Tech Advisors as a Team Team develops presentation	9/1: Attend Team Office Hour w. Instructor	9/2: By noon: post Status Report Pre-brief Sponsor, Mentors
2	Sept 3	**Teams**: Sponsor & Problem Discovery Presentation (10min; 10m q&a) See detailed instructions in Carmen/Navigator	**Workshop**: Professionalism & Team Dynamics	**Instructors**: Systems-thinking & Solving Complex Problems	9/3-9/9: Find & read 5 sources/student about your problem and sponsor & summarize 'bottom lines' of the sources in team Slack channel Interview 1 - 3 POCs to test hypotheses Team work session: develop presentation	9/8: Attend Team Office Hour w. Instructor Update interview log with key take-aways & attendees	9/9: By noon: post Status Report Pre-brief Sponsor, Mentors
3	Sept10	**Teams**: End-User Discovery (10min; 10m q&a) See detailed instructions in Carmen/Navigator	**Workshop**: Interviewing	**Instructors**: Innovation Process & Mindset	9/10-9/16: **Review Instructors' Stoplight Assessment + Adjust Work** Read/Watch Assignments Interview 1 - 3 POCs to test hypotheses Team work session: Synthesis	9/15: Attend Team Office Hour w. Instructor Update interview log with key take-aways & attendees	9/16: By noon: post Status Report Update Sponsor, Mentors

Class	Date	Friday class			Friday -through- Thursday	Wednesday	Thursday
		Hour 1	Hour 2	Hour 3			
II. Phase: Concept Development							
4	*Sept 17*	**Workshop**: Ideation: Empathy-mapping & Information Synthesis		**Instructors**: Innovation's Desirability	9/17-9/23: Read/Watch Assignments Interview 1 - 3 POCs to test hypotheses Team work session: develop presentation	9/22: Attend Team Office Hour w. Instructor Update interview log with key take-aways & attendees	9/23: By noon: post Status Report Pre-brief Sponsor, Mentors
5	*Sept 24*	**Teams**: Solution Update (10min; 10m q&a) See detailed instructions in Carmen/Navigator	**Workshop**: Workflow Mapping		9/24-9/30: Read/Watch Assignments Interview 1 - 3 POCs to test hypotheses Team work session: Synthesis	9/29: Attend Team Office Hour w. Instructor Update interview log with key take-aways & attendees	9/30: By noon: post Status Report Update Sponsor, Mentors
6	*Oct 1*	**Workshop**: Hypothesis-testing		**Instructors**: Innovation's Feasibility	10/1-10/7: **Review Instructors' Stoplight Assessment + Adjust Work** Read/Watch Assignments Interview 1 - 3 POCs to test hypotheses Team work session: develop presentation	10/6: Attend Team Office Hour w. Instructor Update interview log with key take-aways & attendees	10/7: By noon: post Status Report Pre-brief Sponsor, Mentors
7	*Oct 8*	**Teams**: Solution Update (10min; 10m q&a) See detailed instructions in Carmen/Navigator	**Workshop**: Iterative Design		10/8-10/13: Read/Watch Assignments Interview 1 - 3 POCs to test hypotheses Team work session: Synthesis ***Turn in Mid-point Survey***	10/13: Attend Team Office Hour w. Instructor Update interview log with key take-aways & attendees	***OSU closed Fall Break Oct 14. Possible Team Field Trips and Explorations***

Class	Date	Friday class			Friday -through- Thursday	Wednesday	Thursday
		Hour 1	Hour 2	Hour 3			
8	Oct 15	***No Class (Fall Break). Possible Team Field Trips and Explorations***			11/22-11/28: Read/Watch Assignments Interview 1 - 3 POCs to test hypotheses Team work session: develop presentation	10/20: Attend Team Office Hour & Update interview log	10/21: By noon: post Status Report & Pre-brief Sponsor, Mentors
III. Phase: Prototyping							
9	Oct 22	**Teams**: Solution Update (10min; 10m q&a) See detailed instructions in Carmen/Navigator	**Workshop**: Prototyping I	**Instructors**: Innovation's Viability	10/22-10/28: **Review Instructors' Stoplight Assessment + Adjust Work** Read/Watch Assignments Interview 1 - 3 POCs to test hypotheses Team work session: Synthesis	10/27: Attend Team Office Hour w. Instructor Update interview log with key take-aways & attendees	10/28: By noon: post Status Report Update Sponsor, Mentors
10	Oct 29	**Instructors**: Implementation Realities & Public Sector Dynamics		**Workshop**: Assessing Unintended Consequences	10/29-11/4: Read/Watch Assignments Interview 1 - 3 POCs to test hypotheses Team work session: develop presentation	11/3: Attend Team Office Hour w. Instructor Update interview log with key take-aways & attendees	11/4: By noon: post Status Report Pre-brief Sponsor, Mentors
11	Nov 5	**Teams**: Solution Update (10min; 10m q&a) See detailed instructions in Carmen/Navigator	**Workshop**: Prototyping II	**Guest Speaker:** Innovating in the Public Interest	11/5-11/11: Read/Watch Assignments Interview 1 - 3 POCs to test hypotheses Team work session: Synthesis	11/10: Attend Team Office Hour w. Instructor Update interview log with key take-aways & attendees	11/11: By noon: post Status Report Update Sponsor, Mentors

Class	Date	Friday class			Friday -through- Thursday	Wednesday	Thursday
		Hour 1	Hour 2	Hour 3			
12	Nov 12	**Instructors**: Course Deliverables & their Intended Audiences	**Workshop**: Visual Story-making / Video Tips Digital Union	**Workshop**: Compelling Story-telling & red-teaming storyboards	11/12-11/18: **Review Instructors' Stoplight Assessment + Adjust Work** Read/Watch Assignments Interview 1 - 3 POCs to test hypotheses Team work session: draft video & presentation	11/17: Attend Team Office Hour w. Instructor Update interview log with key take-aways & attendees	11/18: By noon: post Status Report Pre-brief Sponsor, Mentors
IV. Phase: Validation and Story-telling							
13	Nov 19	**Teams**: **Rehearsal 1** -- Draft Video, Presentation See detailed instructions in Carmen/Navigator	**Instructors**	**Workshop**: Red-teaming (paired critiques)	11/19-11/24: Share draft video & presentation with as many POCs as possible for feedback Team work session: Synthesis	11/24: Attend Team Office Hour w. Instructor Update interview log with key take-aways & attendees	***OSU closed for Thanksgiving Nov. 25***
14	Nov 26	***No Class (Thanksgiving break)***			11/27-12/2: Share draft video & presentation with as many POCs as possible for feedback; then finalize Test live-streaming w.Ethan before 12/3	12/1: **Teams: Rehearsal 2** w. instructors during Office Hour: almost-Final Video & Presentation	12/2: Pre-brief Sponsor, Mentors Update interview log with key take-aways & attendees
15	Dec 3	**Teams**: **FINAL Video and Oral Presentation to Sponsors and Audience** **LUNCH CELEBRATION immediately following Class**			*12/3-12/10:* Share draft written report with instructors for feedback; then finalize	12/8 **All:** submit peer evaluations of teammates	12/9 **Graduate students only**: submit Reflections paper
Exam Week	*Dec 10*	**Teams:** Submit final written report					

Your Mental Health matters to us. As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce your ability to participate in daily activities. Whether or not you are engaged in distance learning, the Office of Student Life has numerous resources and services available to you at no charge to help you address those concerns.

If you find yourself feeling isolated, anxious or overwhelmed, on-demand mental health resources (go.osu.edu/ccsondemand) are available. You can reach an on-call counselor when CCS is closed at 614- 292-5766. 24-hour emergency help is available through the National Suicide Prevention Lifeline website (suicidepreventionlifeline.org) or by calling 1-800-273-8255(TALK). The Ohio State Wellness app (go.osu.edu/wellnessapp) is also a great resource. For students in recovery or seeking recovery from substance use disorders, learn more about support on campus by visiting the Collegiate Recovery Community. For students facing food insecurity, learn more about the free on-campus food pantry by visiting the Buckeye Food Alliance. For students interested in speaking with a peer to learn more about campus resources, call the Buckeye Peer Access Line. For students interested in meeting with a peer and setting holistic wellness goals, learn more about Wellness Coaching.

Teamwork is required for the successful completion of the course, and team-assignment is a privilege. This interdisciplinary course is a team-based learning experience designed to engage and leverage perspectives from multiple disciplines and lived-experiences. In keeping with our goal of promoting professional work standards, individuals' behavior and teamwork are monitored by the instructors and assigned mentors. Instructors will intervene when conduct is deemed detrimental to a team's progress or damaging to another individual's learning or sense of belonging or value. Possible interventions include instructors' providing one-on-one coaching or group coaching, or an individual's losing the privilege to continue on a team. Loss of team-assignment will result in a failing grade in the course.

Practicalities:

Required Attendance

- **Mode of delivery**: This course is an **in-person** class.
- You are expected to attend class Fridays from 12:00pm – 3:00pm and Team Office Hours. If you have a situation that might cause you to miss class, please discuss it with me as soon as possible.

Required Equipment

- Computer: current Mac (MacOS) or PC (Windows 10) with high-speed internet connection
- Webcam: built-in or external webcam, fully installed and tested
- Microphone: built-in laptop or tablet mic or external microphone

- Other: a mobile device (smartphone or tablet) to use for BuckeyePass authentication

If you do not have access to the technology you need to succeed in this class, review options for technology and internet access at go.osu.edu/student-tech-access.

This online course requires use of CarmenCanvas (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please see these links and request accommodations as early as possible:

CarmenCanvas accessibility (go.osu.edu/canvas-accessibility)
CarmenZoom accessibility (go.osu.edu/zoom-accessibility)

CarmenCanvas Access. You will need to use BuckeyePass (buckeyepass.osu.edu) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you do each of the following:

- Register multiple devices in case something happens to your primary device. Visit the BuckeyePass - Adding a Device (go.osu.edu/add-device) help article for step-by-step instructions.
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click Enter a Passcode and then click the Text me new codes button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Install the Duo Mobile application (go.osu.edu/install-duo) on all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357 (HELP) and IT support staff will work out a solution with you.

Technology Skills Needed for This Course

- Basic computer and web-browsing skills
- Navigating CarmenCanvas (go.osu.edu/canvasstudent)
- CarmenZoom virtual meetings (go.osu.edu/zoom-meetings)
- Recording a slide presentation with audio narration and recording, editing and uploading video (go.osu.edu/video-assignment-guide)

Technology Support. For help with your password, university email, CarmenCanvas, or any other technology issues, questions or requests, contact the IT Service Desk, which offers 24-hour support, seven days a week.

- Self Service and Chat: go.osu.edu/it
- Phone: 614-688-4357 (HELP)
- Email: servicedesk@osu.edu

Policy

COVID Accommodations can be provided. The university strives to make all learning experiences as accessible as possible. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services. If you anticipate or experience academic barriers

based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292- 3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Deadlines may be Extended. Extensions will be granted for family emergencies, religious observances, or unanticipated/unavoidable work-related contingencies, provided the instructors receive such requests by telephone or e-mail before the applicable deadline. Extensions will automatically be granted in the case of *force majeure* events including natural disasters or other Acts of God. However, in such cases, we will attempt to collaborate online using video conferencing or other tools and will adjust deliverables' deadlines as appropriate.

Ohio State and the Glenn College value Diversity. Ohio State and the Glenn College is committed to nurturing a diverse and inclusive environment for our students, faculty, staff, and guests that celebrates the fundamental value and dignity of everyone by recognizing differences and supporting individuality. We are dedicated to creating a safe environment which promotes civil discourse and acknowledges and embraces diverse perspectives on issues and challenges that affect our community.

Ohio State will have an environment free from Harassment, Discrimination, and Sexual Misconduct. The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

Online reporting form at equity.osu.edu,
Call 614-247-5838 or TTY 614-688-8605
Or email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.

- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

Ohio State enforces its Academic Integrity Policy. Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the university's Code of Student Conduct (studentconduct.osu.edu), and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the university's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the university or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the university's *Code of Student Conduct* is never considered an excuse for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the university's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university.
If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:
Committee on Academic Misconduct (go.osu.edu/coam)
Ten Suggestions for Preserving Academic Integrity (go.osu.edu/ten-suggestions)
Eight Cardinal Rules of Academic Integrity (go.osu.edu/cardinal-rules)

Ohio State will make reasonable accommodations to ensure your Access to Learning Experiences. The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability including mental health, chronic or temporary medical conditions, please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services (SLDS). After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services. Disability Services may be contacted:

- Phone: 614-292-3307
- Website: slds.osu.edu
- Email: slds@osu.edu
- In person: Baker Hall 098, 113 W. 12th Avenue

Grading Policy

Grading rubrics for deliverables will be distributed well in advance of deadline dates. Generally the criteria for earning grades are consistent with these standard guidelines:

Grade	GPA %	Criteria
A	4.0 (93-100)	Brilliant and original work; nearly publishable. Commendably clear and thoroughly analytical; comprehensively supported by, and systematically substantiated with, voluminous empirical evidence.
A-	3.67 (90-92.9)	Excellent work; powerful analysis with distinctive, well- structured argument; critical and full awareness of the literature alongside masterful use of empirical evidence to support and substantiate the arguments presented.
B+	3.33 (87-89.9)	Very good; fine analysis with a coherent argument, most of the most important points are developed in a structured discussion; well-substantiated with clear and firm command of supporting empirical evidence.
B	3.0 (83-86.9)	Good; sound analytical skill shown from identification and understanding of the core intellectual problem accompanied by a clear discussion of the subject substantiated with some (albeit insufficient) empirical evidence.
B-	2.67 (80-82.9)	Satisfactory; basic analytical skills apparent from identification of the intellectual problem and an insufficiently developed discussion of the same. Poorly structured argument with inadequate empirical evidence.
C+	2.33 (77-79.9)	Average; little analysis and an insufficiently developed argument. S*ome,* albeit cursory knowledge of the main intellectual problem; *some* key empirical points may have been identified and touched on, basic, but are anemically developed. No detailed familiarity with the literature evident.
C	2.0 (73-76.9)	Below average. weak analysis and an incoherent argument, bare evidence of ability to identify intellectual problem, little use of empirical evidence and minimal knowledge of the relevant literature.
C-	1.7 (70-72.9)	Below average, very weak analysis and an incoherent argument, and little use of empirical evidence and minimum to little knowledge of the relevant literature.
D+	1.3 (67-69.9)	Unsatisfactory, absence of argument, analysis; and little reference to, much less knowledge of, the relevant literature.
D	1.0 (60-66.9)	Unsatisfactory, absence of argument, analysis; and little or much less knowledge of, the relevant literature.
E	0.0 (0-59)	Totally unsatisfactory, absence of argument, analysis; and little if any reference to, much less knowledge of, the relevant literature.

Wicked Science Capstone

ANTHROP 5515 **Spring 2023**

Course Information

- **Course times and location:** Every other Thursday 2:15 – 4:15 PM
- **Credit hours:** 1
- **Mode of delivery:** In person

Instructor

- **Name:** Mark Moritz
- **Email:** moritz.42@osu.edu
- **Office location:** 4058 Smith Laboratory
- **Office hours:** Tuesdays from 3 – 5 PM

- **Preferred means of communication:** email
    - My class-wide communications will be sent through the announcements tool in CarmenCanvas. Please check your notification preferences (go.osu.edu/canvas-notifications) to be sure you receive these messages.

Course Description

The goal of this course is for students to synthesize what they have learned about wicked science and to demonstrate that they have the competencies of wicked scientists who are able to tackle the grand challenges of today and tomorrow—what are otherwise known as wicked problems.

This course serves as a required one-credit capstone for the Graduate Interdisciplinary Specialization (GIS) in Wicked Science. Students will reflect on what they have learned in the specialization, including both required coursework and related activities undertaken outside of the specialization proper (e.g., research, internships, volunteer service, participation in the community of practicing wicked scientists, and other opportunities).

The main learning activitiy is the development of an ePortfolio in which students will synthesize what they have learned and demonstrate that they have developed the competencies of wicked scientists. This is important because wicked science is more than the sum of the three courses that make up the specialization. Key components of the portfolio are a self-assessment of competencies, reflections on the learning process, and discussion of career plans, including how to leverage wicked competencies in their professional field.

Students will develop the portfolio over the course of a semester, using the work that they completed in each of the three required courses for the specialization. The students will get formative feedback from instructor(s), peers, professionals, and other members of the community of practice as they develop the portfolio. Students will develop the portfolio for the career and professional field that they plan to pursue.

Course Goal and Learning Outcomes

The goal of this course is for students to synthesize what they have learned about wicked science and to demonstrate that they have the competencies of wicked scientists who are able to tackle the grand challenges of today and tomorrow—what are otherwise known as wicked problems. This entails that students will be able to meet the following learning outcomes.

1. **Explain what wicked problems are.**
    - Explain the primary characteristics of wicked problems.
    - Analyze interdependencies and system dynamics of a wicked problem.
    - Recognize diverse stakeholders and their respective interests in and conceptions of a given wicked problem.
    - Analyze how wicked problems affect the interests of different stakeholders.
    - Recognize how diverse disciplines might approach the wicked problem based upon their respective interests and conceptions
2. **Communicate research on wicked problems to broader audiences, including policy makers and/or business leaders.**
    - Communicate research on wicked problems clearly and compellingly through different media formats to different audiences.
    - Translate research findings into options for actions by policy makers and business leaders that tackle wicked problems.
    - Present clearly, compellingly and in appropriate formats for policy makers and business leaders.
3. **Consider moral, ethical, and professional expectations in collaborative research.**
    - Know historical ethical problems associated with studying of and wrestling with wicked problems.
    - Know ethical and professional guidelines defined by the professional associations relevant to the student's career.
    - Demonstrate an ability to reflect on ethical and moral considerations when working with stakeholders and tackling wicked problems.
4. **Plan a career in tackling wicked problems.**
    - Identify career goals and opportunities, including those in the public sector, the private sector, non-profits, or academia.
    - Build skills for developing and maintaining professional networks.
    - Foster collegial relationships with peers, mentors, and stakeholders.
5. **Recognize one's motivations for tackling a given wicked problem.**
    - Articulate one's personal reasons for tackling a given wicked problem.
    - Consider how one's motivations compare with or differ from other collaborators when addressing a given wicked problem.

6. **Recognize individual qualities necessary to be successful in collaborative projects.**
    - Identify the habits and attributes of effective collaborators that facilitate effective group interactions.
    - Adopt and employ habits used by effective collaborators in diverse, transdisciplinary teams.
    - Seek mentorship and mentor others regarding collaborative behaviors and habits.
7. **Cultivate the attitude and courage for tackling wicked problems.**
    - Articulate what one does not know about a given problem.
    - Question one's own assumptions about one knows about a problem.
    - Appreciate the complexity, politics, and distinctiveness of the problem.
    - Recognize the value of wrestling with wicked problems regardless of the results.
    - Have fun.

How this Course is Organized

All the assignments and course materials can be found on CarmenCanvas. The course is organized in **bi-weekly modules** in CarmenCanvas that are organized as follows:

- An **overview page** that describes the learning goals, activities in class, and homework assignments for that particular week.
- Links to required as well as recommended **readings** / **videos** / **podcasts**. Students will complete the required readings before coming to class.
- **Weekly homework assignments** in which students will work on different components of the ePortfolio. The assignments are due before Friday 5 PM.
- The **capstone assignment** is an ePortfolio composed with the app Pebblepad. Students will include work from each of the three required courses for the specialization that demonstrates their development of the wicked competencies. The portfolio will be organized and curated in a way that allows the instructor and the professionl panel to trace the students' growth as a wicked scientist. While most of the included items will originate from assignments completed for courses in the specialization, students are also encouraged to include work from other courses, internships, extracurricular activities, and relevant life experiences. In their portfolio, students are expected to clearly demonstrate the following learning goals of the specializaton: (1) using a systems-thinking approach that seriously considers politics, i.e., the roles, interests, and perspectives of stakeholders; (2) collaborate effectively with stakeholders and team members from diverse personal and disciplinary backgrounds and experiences; (3) communicate scientific research and ideas to diverse audiences and through different modalities; (4) meet ethical, collegial, and professional expectations and standards in collaborative research and other professional endeavors: and (5) articulate a sense of purpose and develop competencies, skills, and habits that prepare them for life-long

learning about and engaging with wicked problems. The capstone assignment is due at the end of the semester in final's week.

Expectations for graduate students.

- This course can be taken by undergraduate and graduate students. Graduate students complete all the same assignments as the undergraduates.
- As graduate students are more advanced in their studies, they are expected to mentor and support the learning of the undergraduates enrolled in class.
- In addition to the required readings, graduate students will also read some of the recommended readings.
- The ePortfolio for graduate students has additional components that ask students to communicate the findings from their theses to broader audiences, and in particular potential employers.

Credit hours and work expectations: This is a 1 credit-hour course. According to Ohio State bylaws on instruction (go.osu.edu/credithours), students should expect around 1 hours per week of time spent on direct instruction (instructor content and CarmenCanvas activities, for example) in addition to 2 hours of homework (reading and assignment preparation, for example) to receive a grade of C average.

How Your Grade is Calculated

Assignment Category	Percentage
Participation	20%
Homework assignments (7)	40%
Capstone assignment: ePortfolio	40%

Late Assignments

Due dates are set to help you stay on pace and to allow timely feedback that will help you complete subsequent assignments. You can always submit assignments late and you will never lose points for late submissions, but it is your responsibility to stay on pace. The final deadline for submitting late assignments is by the end of week 11.

Instructor Feedback and Response Time

- **Preferred contact method:** If you have a question, please contact me first through my Ohio State email address. I will reply to emails within **24 hours on days when class is in session at the university**.

- **Class announcements:** I will send all important class-wide messages through the Announcements tool in CarmenCanvas. Please check your notification preferences (go.osu.edu/canvas-notifications) to ensure you receive these messages.
- **Grading and feedback:** For assignments submitted before the due date, I will try to provide feedback and grades within **seven days**. Assignments submitted after the due date may have reduced feedback, and grades may take longer to be posted.
- Remember to call 614-688-4357 (HELP) at any time if you have a technical problem.

Grading Scale

Final grades are based on the following grading scheme: S = satisfactory, U = unsatisfactory.

Course Schedule

Refer to the CarmenCanvas course for up-to-date due dates.

Week 1	**Introduction to the course**: discussion of learning outcomes, class activities, the capstone assignment of the ePortfolio, and the Pebblepad app.
	HW1: introduce yourself, your interest in wicked problems, and your career interests.
Week 3	**Discussion of concept of wicked problems**: revisiting the original contribution by Rittel and Webber, critical analysis of the concept and its applications (Churchman 1967; Rittel and Webber 1973; Kawa et al. 2021). Discussion will focus on how the courses has shaped students' understandings fo wicked problems and wicked science.
	HW2: briefly explain the concept of wicked problems and its components in your own words and discuss how the courses shaped your understanding of the concept and its components. Use specific examples to support your arguments and explanations.
Week 5	**Discussion of the concept of ePortfolios**: key components of the portfolio are a self-assessment of competencies and reflections on the learning process, but they also allow students to communicate their skills to broader audiences (Cambridge 2010; Wakimoto and Lewis 2014).
	HW3: create an annotated outline for the ePortfolio.

	Careers in wicked science: discussion of careers in wicked science in and outside academia with guests from a wide range of different fields (Bolles 2019; Hora et al 2018).
Week 7	**HW4**: research your career field, including requirements, positions, organizations, growth prospects, salaries, alumni who can be contacted for informational interviews, and how you can leverage your wicked competencies
Week 9	**Anatomy of a wicked scientist**: discussion of the competencies of a wicked scientist and the psychometric instruments used in the three required courses to assess wicked competencies (Lotrecchiano et al 2016; Randle and Stroink 2018; Hammer 2011).
	HW5: self-assessment of wicked competencies using results from psychometric assessments taking in the three required courses.
Week 11	**Communicating wicked science:** workshop on how to communicate research on wicked problems clearly and compellingly through different media formats to different audiences, including how to translate research findings into options for actions by policy makers and business leaders that tackle wicked problems (Nisbet and Mooney 2007; Kavanagh 2007; Olson 2015).
	HW6: elevator pitch that explains the value of a wicked science approach in your career field. Bonus points if you record the video in an actual elevator.
Week 13	**Panel evaluation**: an interdisciplinary panel consisting of faculty, members of the community of practice, and professionals from the student's career fields will conduct a formative evaluation of the portfolio and provide critical and supportive feedback for the next career steps. In addition to "celebrate the wins" and "acknowledge the struggles," the panel also provides an external assessment of student competencies
	HW7: near-final version of the ePortfolio shared with panel members one week in advance of class.
Finals week	**Final version of the ePortfolio** is due in finals week.

Required readings

All the required readings are available in CarmenCanvas.

Bolles, Richard N. 2019. *What color is your parachute? A practical manual for job-hunters and career-changers*. New York: Ten Speed Press.

Cambridge, Darren. 2010. *E-Portfolios for lifelong learning and assessment*. San Francisco (CA): Jossey-Bass.

Churchman, C. West. 1967. Guest Editorial: Wicked Problems. *Management Science* 14 (4):B141-B142.

Hammer, Mitchell R. 2011. Additional cross-cultural validity testing of the Intercultural Development Inventory. International Journal of Intercultural Relations 35:474-487.

Hora, Matthew T., Ross J. Benbow, and Bailey B. Smolarek. 2018. Re-thinking Soft Skills and Student Employability: A New Paradigm for Undergraduate Education. *Change: The Magazine of Higher Learning* 50 (6):30-37.

Kavanagh, Etta. 2007. The Risks and Advantages of Framing Science. *Science* 317:1168-1170.

Kawa, Nicholas C., et al. 2021. Training wicked scientists for a world of wicked problems. *Humanities and Social Sciences Communications* 8 (1).

Lotrecchiano, G. R., T. R. Mallinson, T. Leblanc-Beaudoin, L. S. Schwartz, D. Lazar, and H. J. Falk-Krzesinski. 2016. Individual motivation and threat indicators of collaboration readiness in scientific knowledge producing teams: a scoping review and domain analysis. *Heliyon* 2 (5).

Nisbet, M. C., and C. Mooney. 2007. Science and society. Framing Science. *Science* 316 (5821):56.

Olson, Randy. 2015. *Houston, We Have a Narrative - Why Science Needs Story*. Chicago: University of Chicago Press.

Randle, Jason M., and Mirella L. Stroink. 2018. The Development and Initial Validation of the Paradigm of Systems Thinking. Systems Research and Behavioral Science 35 (6):645-657.

Rittel, Horst W. J., and Melvin M. Webber. 1973. Dilemmas in a general theory of planning. *Policy Sciences* 4:155-169.

Wakimoto, Diana K., and Rolla E. Lewis. 2014. Graduate student perceptions of eportfolios: Uses for reflection, development, and assessment. *The Internet and Higher Education* 21:53-58.

Recommended readings

All recommended readings are available in CarmenCanvas.

Agar, Michael. 2006. An Ethnography By Any Other Name … *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research* 7 (4).

Alford, John, and Brian W. Head. 2017. Wicked and less wicked problems: a typology and a contingency framework. *Policy and Society* 36 (3):397-413.

Bammer, Gabriele. 2013. *Disciplining Interdisciplinarity: Integration and Implementation Sciences for Researching Complex Real-World Problems*. Canberra (Australia): Australian National University.

Baron, Nancy. 2010. *Escape From the Ivory Tower: A guide to making your science matter*. Washington DC: Island Press.

Baumgartner, Jeffrey. *The Basics of Creative Problem Solving - CPS*. Innovation Management 2021 cited September 2, 2021. Available from https://innovationmanagement.se/2010/06/02/the-basics-of-creative-problem-solving-cps/.

Bennett, L. M., H. Gadlin, and S. Levine-Finley. 2018. Collaboration and team science: A field guide. Bethesda (MD): National Institutes of Health.

Bhasin, Ritu. 2017. *Authenticity Principle: Resist Conformity, Embrace Differences, and Transform How You Live, Work, and Lead*. Toronto (Canada): Melanin Made Press.

Came, H., and D. Griffith. 2018. Tackling racism as a "wicked" public health problem: Enabling allies in anti-racism praxis. *Social Science and Medicine* 199:181-188.

Civic Laboratory for Environmental Action Research (CLEAR). 2020. Civic Laboratory for Environmental Action Research (CLEAR) Lab Book: A living manual of our values, guidelines, and protocols.

Cockburn, Jessica, and Georgina Cundill. 2018. Ethics in Transdisciplinary Research: Reflections on the Implications of 'Science with Society'. In *The Palgrave Handbook of Ethics in Critical Research*, edited by C. I. Macleod, J. Marx, P. Mnyaka and G. J. Treharne: Springer Verlag.

DeFries, R., and H. Nagendra. 2017. Ecosystem management as a wicked problem. *Science* 356 (6335):265-270.

Hall, Kara L., Amanda L. Vogel, and Robert T. Croyle, eds. 2019. *Strategies for Team Science Success: Handbook of Evidence-Based Principles for Cross-Disciplinary Science and Practical Lessons Learned from Health Researchers*. Cham (Switzerland): Springer Nature.

Liboiron, Max, Alex Zahara, and Ignace Schoot. 2018. Community Peer Review: A Method to Bring Consent and Self-Determination into the Sciences. *Preprints*.

Liboiron, Max, France Liboiron, Emily Wells, Natalie Richárd, Alexander Zahara, Charles Mather, Hillary Bradshaw, and Judyannet Murichi. 2016. Low plastic ingestion rate in Atlantic cod (Gadus morhua) from Newfoundland destined for human consumption collected through citizen science methods. *Marine Pollution Bulletin* 113 (1):428-437.

Mason, Tom H. E., Chris R. J. Pollard, Deepthi Chimalakonda, Angela M. Guerrero, Catherine Kerr-Smith, Sergio A. G. Milheiras, Michaela Roberts, Paul Rodrigue, and Nils Bunnefeld. 2018. Wicked conflict: Using wicked problem thinking for holistic management of conservation conflict. *Conservation Letters* 11 (6):e12460.

Meadows, Donella. 1999. *Leverage Points: Places to intervene in a system*. Hartland (VT): The Sustainability Institute.

Philips, Katherine W. 2017. What is the real value of diversity in organizations? Questioning our assumptions. In *The diversity bonus: How great teams pay off in the knowledge economy*, edited by S. E. Page. Princeton (NJ): Princeton University Press.

Pyrko, I., V. Dorfler, and C. Eden. 2017. Thinking together: What makes Communities of Practice work? *Human Relations* 70 (4):389-409.

Ravitch, Sharon M., and Matthew Riggan. 2012. *Reason & Rigor: How conceptual frameworks guide research*. Los Angeles (CA): Sage.

Sahneh, F., M. A. Balk, M. Kisley, C. K. Chan, M. Fox, B. Nord, E. Lyons, T. Swetnam, D. Huppenkothen, W. Sutherland, R. L. Walls, D. P. Quinn, T. Tarin, D. LeBauer, D. Ribes, D. P. Birnie, 3rd, C. Lushbough, E. Carr, G. Nearing, J. Fischer, K. Tyle, L. Carrasco, M. Lang, P. W. Rose, R. R. Rushforth, S. Roy, T. Matheson, T. Lee, C. T. Brown, T. K. Teal, M. Papes, S. Kobourov, and N. Merchant. 2021. Ten simple rules to cultivate transdisciplinary collaboration in data science. *PLoS Computational Biology* 17 (5):e1008879.

Simpson, Audra. 2007. On Ethnographic Refusal: Indigeneity, ‘Voice’ and Colonial Citizenship. *Junctures* 9:67-80.

Stroh, David Peter. 2015. *Systems thinking for social change*. White River Junction (VT): Chelsea Green Publishers.

Wade, A.A., A. Grant, S. Karasaki, R. Smoak, D. Cwiertny, A.C. Wilcox, L. Yung, K. Sleeper, and A. Anandhi. 2020. Developing leaders to tackle wicked problems at the nexus of food, energy, and water systems. *Elementa - Science of the Anthropocene* 8 (1):11.

Required Equipment

- **Computer:** current Mac (MacOS) or PC (Windows 10) with high-speed internet connection
- **Other:** a mobile device (smartphone or tablet) to use for BuckeyePass authentication

If you do not have access to the technology you need to succeed in this class, review options for technology and internet access at go.osu.edu/student-tech-access.

CarmenCanvas Access

You will need to use BuckeyePass (buckeyepass.osu.edu) multi-factor authentication to access your courses in CarmenCanvas. To ensure that you are able to connect to CarmenCanvas at all times, it is recommended that you do each of the following:

- Register multiple devices in case something happens to your primary device. Visit the BuckeyePass - Adding a Device (go.osu.edu/add-device) help article for step-by-step instructions.
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click **Enter a Passcode** and then click the **Text me new codes** button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Install the Duo Mobile application (go.osu.edu/install-duo) on all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357 (HELP) and IT support staff will work out a solution with you.

Technology Skills Needed for this Course

- Basic computer and web-browsing skills
- Navigating CarmenCanvas (go.osu.edu/canvasstudent)
- CarmenZoom virtual meetings (go.osu.edu/zoom-meetings)

Technology Support

For help with your password, university email, CarmenCanvas, or any other technology issues, questions or requests, contact the IT Service Desk, which offers 24-hour support, seven days a week.

- **Self Service and Chat**: go.osu.edu/it
- **Phone:** 614-688-4357 (HELP)
- **Email:** servicedesk@osu.edu

Other Course Policies

Student Well-Being

The well-being of students is of primary importance. If you are facing any challenges related to your physical or mental health, or obstacles like food or housing insecurity, please do not hesitate to get in touch to discuss ways we can put you in the best possible position to succeed.

Discussion and Communication Guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style**: While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. A more conversational tone is fine for non-academic topics.
- **Tone and civility**: Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online. I will provide specific guidance for discussions on controversial or personal topics.
- **Citing your sources**: When we have academic discussions, please cite your sources to back up what you say. For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.
- **Backing up your work**: Consider composing your academic posts in a word processor, where you can save your work, and then copying into the CarmenCanvas discussion.

Academic Integrity Policy

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the university's Code of Student Conduct (studentconduct.osu.edu), and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the university's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the university or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another

student, and possession of unauthorized materials during an examination. Ignorance of the university's *Code of Student Conduct* is never considered an excuse for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the university's Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university.
If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- Committee on Academic Misconduct (go.osu.edu/coam)
- Ten Suggestions for Preserving Academic Integrity (go.osu.edu/ten-suggestions)
- Eight Cardinal Rules of Academic Integrity (go.osu.edu/cardinal-rules)

Creating an Environment Free from Harassment, Discrimination, and Sexual Misconduct

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

1. Online reporting form at equity.osu.edu,
2. Call 614-247-5838 or TTY 614-688-8605,
3. Or email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

Your Mental Health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. No matter where you are engaged in distance learning, The Ohio State University's Student Life Counseling and Consultation Service (CCS) is here to support you. If you find yourself feeling isolated, anxious or overwhelmed, on-demand mental health resources (go.osu.edu/ccsondemand) are available. You can reach an on-call counselor when CCS is closed at 614- 292-5766**. 24-hour emergency help** is available through the National Suicide Prevention Lifeline website (suicidepreventionlifeline.org) or by calling 1-800-273-8255(TALK). The Ohio State Wellness app (go.osu.edu/wellnessapp) is also a great resource.

Accessibility Accommodations for Students with Disabilities

The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability including mental health, chronic or temporary medical conditions, please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services (SLDS). After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services.

Disability Services Contact Information

- Phone: 614-292-3307
- Website: slds.osu.edu
- Email: slds@osu.edu
- In person: Baker Hall 098, 113 W. 12th Avenue

Accessibility of Course Technology

This online course requires use of CarmenCanvas (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations as early as possible.

- CarmenCanvas accessibility (go.osu.edu/canvas-accessibility)
- Streaming audio and video
- CarmenZoom accessibility (go.osu.edu/zoom-accessibility)

Course Handbook

SP 2022

DESIGN 4650|5650: Collaborative Design Studio

Department of Design
College of Arts & Sciences
The Ohio State University

Dr. Sébastien Proulx, Associate Professor

Course Handbook

DESIGN 4650|5650: Collaborative Design Studio

Department of Design
College of Arts & Sciences
The Ohio State University

Date and Time	Tuesday & Thursday 9:35 am—12:15 pm
Classroom	Hayes Hall 225
Format	Studio
Credit Units	3 (5200.01) | 3 (5101)
Prerequisites	Enrollment in Design major, or permission of instructor. Concur: 4151 and 4750; or 4152 and 4750; or 4153 and 4750. Not open to students with credit for 760.
Instructor	Dr. Sébastien Proulx, Associate Professor 125B Hayes Hall Email: proulx.12@osu.edu Office hours: by appointment

COURSE DESCRIPTION, OBJECTIVES AND EXPECTATION

The COVID-19 pandemic has provided many examples revealing the value of design and designers in addressing public health matters. Since March 2019, designers were called upon to activate public health measures and imagine strat- egies nudging the population to follow sanitary prescriptions; from improving mask design to the development of expressly burdensome and inconvenient testing procedures in hope of motivating people toward vaccination. But the reach of public health obviously expend far greater than the extraordinary circumstances and demands associated to the COVID-19 pandemic.

According to the American Public Health Association (APHA), "Public health promotes and protects the health of people and the communities where they live, learn, work and play." As such, broad issues like racism, literacy, internet access, food safety, sexual wellbeing, tobacco uses, etc., are all to be considered as public health matters of concern. The kind of wicked and complex-social problems for which *Social Design* as develop an appetite for (Gauthier, Proulx, Vial, 2017). Interestingly, the field of public health remains somewhat blind to the potential agency designers may have in their practice. To explore this blind spot, this collaborative studio will challenge students to envision design proposals to a series of public health challenges. To emphasize the originality of design perspectives and capabilities, the course will focus on the development of subversive, critical and disruptive ways through which design can engage with public health issues. Calling upon designers to develop public health interventions ought to shed light on the value of a user-experience focus practice in the development of contextually fitted health programming.

Given the nature and horizon pursued in this course, enrolled students will leave their typical major specialization at the door and come ready to think more broadly and strategically about how designerly ways of thinking and doing may be called upon in the context of designing for public health. The potential projects are open in form but could include: service design, products, policy, environmental design, ubiquitous digitaltechnology, signage, etc. The outcomes of the class explorations could lead to a collective publication or exhibition.

FORMAT

This is a progress-oriented, design studio course that requires active student participation. Class will meet two days per week, and will be comprised of lectures, individual and group meetings, readings, group discussions, presentations, project critiques. The course may also entail out of class meetings with external partners. Students will be provided with comprehensive assignment description and access to a Carmen website and other digital tools to support their learning experience.

LEARNING OUTCOMES

At the end of the course successful students should be able, at an advanced level, to:

- Acknowledge the complexity of social realities and appraise how socio-contextual variables may affect health behaviors
- Consider unconventional conceptual categories to foster the development of innovative solution
- Leverage experience design to develop contextually fitted preventive measures or programs
- Adopt an abductive logic of reasoning and use iterative ideation and divergent scenarii has a reflective framework
- Work effectively in collaborative multidisciplinary setting
- Think broadly about the boundaries of specific design discipline
- Develop and propose culturally fitted motivational public health measures

COURSE MATERIALS

Readings & Resources

- Birkhead, Guthrie S., et al. Essentials of Public Health, Jones & Bartlett Learning, LLC, 2020. ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/ohiostate-ebooks/detail.action?docID=6036864.
- Fassin, D. (2018). Life. A Critical User's Manual. Polity Press.
- Marmot, M. (2015) The Health Gap. The Challenge of an Unequal World. Bloomsbury Press.
- Mitchell, K. R., Lewis, R., O'Sullivan, L. F., & Fortenberry, J. D. (2021). What is sexual wellbeing and why does it matter for public health?. The Lancet Public Health. https://doi.org/10.1016/ S2468-2667(21)00099-2
- Nussbaum, M. (2013). Creating Capabilities: The Human Development Approach. Belknap Press
- Slote, M. (2008). The Ethics of Care and Empathy. Routledge
- https://www.itonics-innovation.com/blog/scenario-planning-developing-pictures-of-the-future

All cited references are available through Carmen, as well as supplemental materials.

GRADING AND ASSIGNMENTS

Assignment	Value (100%)
1. Topical Research	**25%**
• Individual section of the research dossier	10%
• Research dossier	5%
• Class presentation	5%
• Peer-assessment of the research dossier	5%
2. Reading Quizzes	**12%**
• Quiz 1, What is Public Health	2%
• Quiz 2, On Human Vulnerability & Care Ethics	2%
• Quiz 3, Public Health (Social Determinants of Health)	2%
• Quiz 4, Nudge	2%
• Quiz 5, What is an Apparatus	2%
• Quiz 6, Critical/Discursive Design	2%
3. Design Challenge 1	**12%**
• Proposed Concept	5%
• Design Process	3%
• Book Assets	2%
• Peer-Assessment	2%
4. Design Challenge 2	**12%**
• Proposed Concept	5%
• Design Process	3%
• Book Assets	2%
• Peer-Assessment	2%
5. Design Challenge 3	**12%**
• Proposed Concept	5%
• Design Process	3%
• Book Assets	2%
• Peer-Assessment	2%
6. Design Challenge 4	**12%**
• Proposed Concept	5%
• Design Process	3%
• Book Assets	2%
• Peer-Assessment	2%
8. Reflective Essay	**10%**
9. Class Participation	**5%**

GRADING SCALE

A 93–100	**B+** 87–89.9	**C+** 77–79.9	**D+** 67–69.9	**E** 0–59
A- 90–92.9	**B** 83–86.9	**C** 73–76.9	**D** 60–66.9	
	B- 80–82.9	**C-** 70–72.9		

ATTENDANCE POLICY & LATE ASSIGNMENTS

Design is a field that requires discipline, timely participation, and respectful and thoughtful communication. Timely and consistent engagements are critical in all formats used to deliver the content of this course. You are expected to come to class prepared and to participate actively in each class. Spontaneous and planned studio experiences and discussions are impossible to recapture or duplicate. Attendance will be taken regardless of delivery format. *In the instance of class-wide quarantine or campus closure, a course contingency plan has been designed so that we can transition to an exclusively on-line format if we are required to actuate one.*

The Department of Design recognizes that students may on occasion miss class due to extenuating circumstances such as illness, emergency or other important matters. When this occurs, it is your responsibility to request updates and notes from a peer and to review any course material on Carmen that is associated with the class you missed. It is important to notify your instructor of factors that may be impacting your ability to be present or participate effectively in a timely manner. Please communicate attendance concerns when appropriate.

Attendance, productive class activity and meeting in-progress deadlines are factors in the assessment of your assignments. Students are expected to be present and active for the entire class period. Attendance may be taken at any point in the course meeting therefore, you may be counted as absent if you are not present when attendance is taken. Three late entries/early departures = one absence. Tardiness, missing class, and poor preparation can, therefore, impact your project/course grades in a detrimental manner.

The Department of Design acknowledges that illness, family obligations, and other conflicts with your classes do occur from time to time and up to three absences are allowed for any reason during the semester without penalty. All absences from class will be counted, however, and in the instance that you miss three class meetings, you are required to meet with your instructor to discuss strategies for avoiding additional absences. Missing class more than 20% of the semester (six class meetings for a course that meets twice a week) may result in an E grade for the course.

Students are required to attend and be on time to all schedule meetings. Each late project or late arrival on review days will result in an automatic grade reduction of one step on the grade ladder.

Finished work received after the due date and time of an assignment will be accepted (unless indicated otherwise), but you must speak with the instructor to negotiate a modified deadline in order for late work to receive credit. ***A grade penalty may still be applied.***

Communication requesting a modified deadline must take place within 24 hours of the original deadline. Any work received after the modified deadline will not receive credit.

FACULTY FEEDBACK AND RESPONSE TIME

I am here to help and I encourage you to communicate with me. The following list to give you an idea of my intended availability throughout the course and to encourage proactive communication. (Remember that you can call ***614-688-HELP*** at any time if you have a technical computer-related problem.)

Grading and feedback
For assignments, you can generally expect feedback within 7-10 days.

Direct Communication
I will make every effort to reply to e-mails within 24 hours on weekdays. Please note that e-mail sent between 5 pm and 8 am are not likely to be answered until the following day. For short message always prefer using the Slack channel.

Buckeyemail
Email through your Buckeyemail will be the only source of private and secure conversations. General information, personal matters, assignment or class-related inquiries or other similar topics should be addressed using this sources. All university correspondence is sent to your BuckeyeMail email address, and all email sent to faculty and staff should be sent from your BuckeyeMail email address. Ohio State will never ask you for your Ohio State username or password. Do not reply to any email asking for your Ohio State username, password, or other personal information. Report such messages to report-phish@osu.edu.

COURSE TECHNOLOGY

For help with your password, university e-mail, Canvas, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at https://ocio.osu.edu/help/hours, and support for urgent issues is available 24x7.

- Self-Service and Chat support: http://ocio.osu.edu/selfservice
- Phone: 614-688-HELP (4357)
- Email: 8help@osu.edu
- TDD: 614-688-8743

ACADEMIC INTEGRITY (ACADEMIC MISCONDUCT)

From: http://oaa.osu.edu/coamfaqs.html#academicmisconductstatement

The Ohio State University's Code of Student Conduct (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the University, or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University's Code of Student Conduct is never considered an "excuse" for academic misconduct, so I recommend that you review the Code of Student Conduct and, specifically, the sections dealing with academic misconduct.

The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's Code of Student Conduct, and that all students will complete all academic and scholarly assignments with fairness and honesty. Failure to follow the rules and guidelines established in the University's Code of Student Conduct may constitute "Academic Misconduct." Sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University.

ACCOMMODATION OF ALTERNATIVE NAMES AND GENDER PRONOUNS

Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender identity and expression, and nationalities. Class rosters are provided to the instructor and may include the student's legal name unless changed via the University Name Change policy. I will gladly honor your request to address you by another name or gender pronoun. Please advise me of this early in the semester so that I may make appropriate changes to my records.

HEALTH AND SAFETY

All students, faculty and staff are required to comply with and stay up to date on all university safety and health guidance (https://safeandhealthy.osu.edu), which includes wearing a face mask in any indoor space and maintaining a safe physical distance at all times. Non-compliance will be warned first and disciplinary actions will be taken for repeated offenses.

MENTAL HEALTH

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting ccs.osu.edu or calling 614-292-5766. CCS is located on the

4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273-TALK or at suicidepreventionlifeline.org.

SEXUAL MISCONDUCT/RELATIONSHIP VIOLENCE

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g. race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at http://titleix.osu.edu or by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at titleix@osu.edu

ADA STATEMENT

The university strives to make all learning experiences as accessible as possible. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Source: https://slds.osu.edu/faculty-staff/best-practices-and-resources/

COURSE OUTLINE AND PROVISIONAL SCHEDULE

WEEK 1	
Tuesday 01/11	**Topics** Syllabus, Course Introduction • What is Public Health and How Does it Relate to Design
Thursday 01/13	**Topics** Exploration of studio topics **Deliverables** • Reading Quiz 1 What is Public Health • Team presentation on the distributed topics
WEEK 2	
Tuesday 01/18	**Topics & Course Materials** Research Dossier **Deliverables** • Reading Quiz, 2 Care Ethics
Thursday 01/20	**Topics & Course Materials** Research Dossier **Deliverables** • Reading Quiz 3, Social Determinants of Health
WEEK 3	
Tuesday 01/25	**Topics & Course Materials** Research Dossier **Deliverables** • Reading Quiz 4, Nudge
Thursday 01/27	**Topics & Course Materials** Research Dossier **Deliverables** • Prelimenary Class Presentation
WEEK 4	
Tuesday 02/01	**Topics & Course Materials** Research Dossier **Deliverables** • Reading Quiz 5, What is an Apparatus
Thursday 02/03	**Topics & Course Materials** Research Dossier **Deliverables** • Research Dossier
WEEK 5	

Tuesday 02/08	**Topics & Course Materials** • Design Challenge 1 - Research Dossier Presentation **Deliverables** • Quizz 6, Critical/Discursive Design
Thursday 02/10	**Topics & Course Materials** • Design Challenge 1 -Scenario Presentation
WEEK 6	
Tuesday 02/15	**Topics & Course Materials** • Design Challenge 1
Thursday 02/17	**Topics & Course Materials** • Design Challenge 1
WEEK 7	
Tuesday 02/22	**Topics & Course Materials** • Design Challenge 1 - Proposal Presentation
Thursday 02/24	**Topics & Course Materials** • Design Challenge 2 - Research Dossier Presentation
WEEK 8	
Tuesday 03/01	**Topics & Course Materials** • Design Challenge 2 -Scenario Presentation **Deliverables** • Design Challenge 1 - Book Assets
Thursday 03/03	**Topics & Course Materials** • Design Challenge 2
WEEK 9	
Tuesday 03/08	**Topics & Course Materials** • Design Challenge 2
Thursday 03/10	**Deliverables** • Design Challenge 2 - Book Assets **Topics & Course Materials** • Design Challenge 2 -Proposal Presentation
WEEK 10	
Tuesday 03/15	**SPRING BREAK**
Thursday 03/17	
WEEK 11	
Tuesday 03/22	**Topics & Course Materials** • Design Challenge 3- Research Dossier Presentation
Thursday 03/24	**Topics & Course Materials** • Design Challenge 3 - Scenario Presentation
WEEK 12	
Tuesday 03/29	**Topics & Course Materials** • Design Challenge 3 **Deliverables** • Design Challenge 2 - Book Assets
Thursday 03/31	**Topics & Course Materials** • Design Challenge 3
WEEK 13	
Tuesday 04/05	**Topics & Course Materials** • Design Challenge 3 - Proposal Presentation
Thursday 04/07	**Topics & Course Materials** • Design Challenge 4 - Research Dossier Presentation
WEEK 14	
Tuesday 04/12	**Topics & Course Materials** • Design Challenge 4 - Scenario Presentation **Deliverables** • Design Challenge 3 - Book Assets
Thursday 04/14	**Topics & Course Materials** • Design Challenge 4
WEEK 15	
Tuesday 04/19	**Topics & Course Materials** • Design Challenge 4
Thursday 04/21	**Topics & Course Materials** • Design Challenge 4 - Proposal Presentation
WEEK 16	
Tuesday 04/26	**Deliverables** • Design Challenge 4 - Book Assets • Essay

TEAM ASSIGNMENTS

Research			
Team 1	**Team 2**	**Team 3**	**Team 4**
Ashley (G-DRD) Annie (3-IND) Caden (3-INT)	Aurora (4-INT) Madyson (3-IND) Sammy (4-INT) Katryn (3-VCD)	Whitney (4-VCD) Theresa (3-IND) Fabian (3-INT) Shaylee (3-VCD)	Jordan (4-VCD) Lindsay (4-INT) Jane (3-VCD) Candie (3-INT)
Challenge 1			
Team 1	**Team 2**	**Team 3**	**Team 4**
Aurora (4-INT) Ashley (G-DRD) Whitney (4-VCD) Candie (3-INT)	Sammy (4-INT) Annie (3-IND) Fabian (3-INT) Jordan (4-VCD)	Madyson (3-IND) Caden (3-INT) Shaylee (3-VCD) Jane (3-VCD)	Katryn (3-VCD Theresa (3-IND) Lindsay (4-INT)
Challenge 2			
Team 1	**Team 2**	**Team 3**	**Team 4**
Whitney (4-VCD) Annie (3-IND) Madyson (3-IND)	Theresa (3-IND) Ashley (G-DRD) Sammy (4-INT) Jane (3-VCD)	Fabian (3-INT) Aurora (4-INT) Katryn (3-VCD) Jordan (4-VCD)	Shaylee (3-VCD) Caden (3-INT) Lindsay (4-INT) Candie (3-INT)
Challenge 3			
Team 1	**Team 2**	**Team 3**	**Team 4**
Jordan (4-VCD) Ashley (G-DRD) Aurora (4-INT) Fabian (3-INT)	Lindsay (4-INT) Annie (3-IND) Sammy (4-INT) Shaylee (3-VCD)	Jane (3-VCD) Caden (3-INT) Katryn (3-VCD) Theresa (3-IND)	Candie (3-INT) Madyson (3-IND) Whitney (4-VCD)
Challenge 4			
Team 1	**Team 2**	**Team 3**	**Team 4**
Ashley (G-DRD) Madyson (3-IND) Whitney (4-VCD)	***Ashley + Seb*** Sammy (4-INT) Fabian (3-INT) Jordan (4-VCD) Lindsay (4-INT)	Annie (3-IND) Katryn (3-VCD) Shaylee (3-VCD) Candie (3-INT)	Caden (3-INT) Aurora (4-INT) Theresa (3-IND) Jane (3-VCD)

POTENTIAL PUBLIC HEALTH CHALLENGES

Sexual Wellness
Active Living
Urban Safety
Food Insecurity
Social Isolation/Exclusion
Racism
Living with Disability
Literacy
Internet Access
Motor vehicle injuries
Vaccination hesitancy
Infectious Deseases
Mental Health
Teen pregnancy
Tobacco Use
Health screening
etc.

Assignment 1

Topical Research

Assignment due	February 3
Value	25%

PROJECT DESCRIPTION AND OBJECTIVES

To explore the various public health challenges identified, students will be divided in team and tasked with developping a *Research Dossier* around a randomly assigned topic. This *Research Dossier* is meant to serve as the information ressources that will support the effort of the whole class during the series of *Design Challenge*. The *Research Dossier* is to be understood as a group deliverable as the team most work together to coordinate their efforts. However, each student will individually select to complete one of three section of the *Research Dossier*. The three section defines as follow

- **Issues & Definitions (2 people dedicated to this):**
  This is a general information section that focus on concepts definition and description of central issues.
- **Epidemological data:**
  This section will focus on presenting key epidemiological facts and figures describing issues pertaining to the topic
- **Concrete problems exemples & Current Solutions:**
  This section will present specific depiction of the problem space by listing concrete problems and presenting current solutions.

While independant, each sections are to be related to one another. The team is also responsible for organising the presentation of the research findings in structured way. The *Research Dossier* are to be prepared so others are easily able to go through the research and be able to develop design proposals.

To launch the *Design Challenges*, the team responsible for the research on atopic, will do a *Briefing Presentation*. The role of the presentation is to introduce the topic, bring the rest of the class up to speed on the matters at stake and present how to use your *Research Dossier*.

ASSOCIATED COURSE MATERIALS:

- Startup packet (Available on Carmen)

DELIVERABLES

Research Dossier
(An organised PDF File containing the three sections)

Book Assets

- An orginal photograph representative of the problem space (11”X17” at 300 DPI)
- A written summary of the topic problem-space (500-750 Words)
- List of mobilized references

A class Briefing Presentation

GRADE BREAKDOWN, DELIVERABLE AND CORRESPONDING RUBRIC

Individual Section (Graded as an individual effort)	**/10**
Capacity to analyse a problem space and demonstrated capacity to appreciate the full extent of its ramifications	
Capacity to use and report sources according the scientific standards	
Capacity to organize information for other to understand and instrumentalize	
Quality of written communication	
Research File (Graded as a team effort)	**/5**
The research dossier provided contained sufficient and useful information	
The research dossier was well structure and organized and easy to use	
Book Assets (text)	
Book Assets (image)	
Class Presentation (Graded as a team effort)	**/5**
Capacity to summarize findings and provide clear overview of a public health matter	
Quality of oral and visual communication	
Peer-Assessment of the research dossier (Graded as a team effort)	**/5**
The research dossier provided contained sufficient and useful information	
The research dossier was well structure and organized and easy to use	

* Evaluation based on the letter grade scale.

Assignment 2-6

Design Challenges

Assignment due	Challenge 1 Challenge 2 Challenge 3 Challenge 4
Value	12% (each) 48% (cumulative)

PROJECT DESCRIPTION AND OBJECTIVES

To explore design potential contribution in the realm of public health, students will go through a series of five (two weeks) design challenges. Each challenges will be structure around one of the five public health issue previously researched. Divided in randomly assigned team (teams will be reshuffled for each challenge) students will collaborate to develop a concept proposal to specific problem identified from the provided *Research Dossier.*

To develop their proposal students will engaged with divergent scenario method and will follow the perspective of critical and discursive design. This approach entails that proposal don't need to be realistic or "applicable" as much as eye opener, highlighting problems and opportunities that deserve our attention and shed light on intervention strategies that have not yet been explored.

DELIVERABLES

Design Proposal
Design Process
Book Assets

- An introduction to the problem and the design proposal developped (Template provided and available on Carmen)
- An hero shot of the concept 8.5"X11" at 300 DPI
- A series of 3-5 secondary images and their caption 4"x5" 300 DPI
- Documentation of the design process (written and visual)

GRADE BREAKDOWN, DELIVERABLE AND CORRESPONDING RUBRIC

Proposed Concept	**/3**
Capacity to analyse a problem space, identified opportunity and leverage design capabilities to foster reflection on public health matter	
Design Process	**/3**
Capacity to analyze a public health situation	
Capacity to use design to uncover potential space for intervention	
Capacity to explore competing alternatives and develop numerous ideas	
Book Assets	**/2**
Capacity to concesily describe, in a written format, a problem, a design proposal and explain a design process	
Capacity to visualize complex ideas	
Peer-Assessment	**/2**
Capacity to collaborate and contribute the team work	

* Evaluation based on the letter grade scale.

Assignment 7

Reading Quizzes

Assignment due	Quiz 1: January 12 Quiz 2 : January 17 Quiz 3: January 19 Quiz 4: January 24 Quiz 5: January 31 Quiz 6: February 7
Value	12%

PROJECT DESCRIPTION AND OBJECTIVES

To support engagement in the course students are provided with challenging readings and are prompted with a question to reflect on. Students will write their answer on the Carmen. Answers should be between 250 and 300 words.

The answer should be submitted before 9:35 AM on the due date. Failing to submit the answer in time will equal an automatic incomplete worth 2% of the course final grade. ***There will be no opportunities to resubmit this answer after the deadline has passed.***

GRADE BREAKDOWN, DELIVERABLE AND CORRESPONDING RUBRIC

Deliverables: 250-300 words reflective answer to questions pertaining to an assigned reading	
Rubric (same for each quiz)	
The answer to the question demonstrates a genuine and thoughtful reflective effort	☐ Yes ☐ No
Respect of the assignment parameter	☐ Yes ☐ No
Result	☐ Excellent (2 points) ☐ Satisfactory (1 point) ☐ Unsatisfactory (0 point)

Assignment 8

Assignment Reflective Essay

Assignment due	April 26
Value	10%

PROJECT DESCRIPTION AND OBJECTIVES

For this final assignment students are required to write an essay (around 1000 words) around one of the book listed below. In this essay students are expected to develop a personal point of view on the challenges, opportunities and responsibilities associated with designing for public health. Students are expected to make references to the various readings and projects discussed and realized during the semester.

- Fassin, D. (2018). *Life. A Critical User's Manual*. Polity Press.
- Marmot, M. (2015) *The Health Gap. The Challenge of an Unequal World*. Bloomsbury Press.
- Nussbaum, M. (2013). *Creating Capabilities: The Human Development Approach*. Belknap Press
- Slote, M. (2008). *The Ethics of Care and Empathy*. Routledge

* ***Students can also suggest a book of their own choosing but must be approved by the instructor prior February 1, 2021. It cannot be a "Design" book.***

GRADE BREAKDOWN, DELIVERABLE AND CORRESPONDING RUBRIC

Ideas and analysis	/7
Provides exceptional and thought-provoking analysis that directly addresses details and examples.	**A|A-**
Provides Information clearly relating to the main topic. It provides some supporting details and examples. Analyses not as clear as they could be.	**B+|B|B-**
Provides Information clearly relating to the main topic. No details or examples are given. Personal analysis followed script from the text book or source material.	**C+|C|C-**
Information has little to do with the main topic. Analyses are not well organized or clear. Offered no personal analysis.	**D+|D|E**
Sentence Structure, Grammar, Mechanics & Spelling	**/3**
All sentences are well constructed and have varied structure and length. The author makes no errors in grammar, mechanics, and/or spelling.	**A|A-**
Most sentences are well constructed and have varied structure and length. The author makes a few errors in grammar, mechanics, and/or spelling, but they do not interfere with understanding.	**B+|B|B-**
Most sentences are well constructed, but they have a similar structure and/or length. The author makes several errors in grammar, mechanics, and/or spelling that interfere with understanding.	**C+|C|C-**
Sentences sound awkward, are distractingly repetitive, or are difficult to understand. The author makes numerous errors in grammar, mechanics, and/or spelling that interfere with understanding.	**D+|D|E**

* Evaluation based on the letter grade scale.

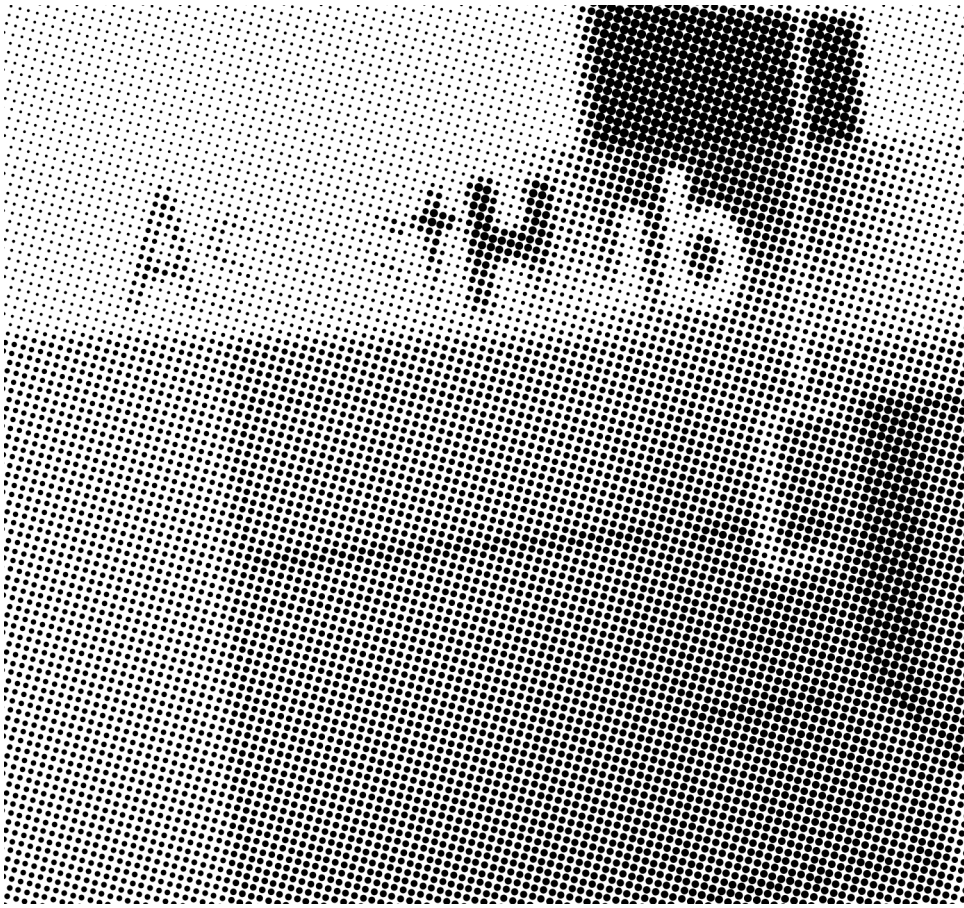
Assignment 9

Class Participation (Instructor fun factor)

Assignment due	Ongoing Assessment
Value	5%

GRADE BREAKDOWN, DELIVERABLE AND CORRESPONDING RUBRIC

Class attendance and engagement in course related activities	⬚ Excellent ⬚ Satisfactory ⬚ Unsatisfactory
Engagement during class discussions	⬚ Excellent ⬚ Satisfactory ⬚ Unsatisfactory
Active participation during reviews	⬚ Excellent ⬚ Satisfactory ⬚ Unsatisfactory



THE OHIO STATE
UNIVERSITY

BEYOND 15+HIGH

A Co-Design Studio for Graduate Students

Course Number: D6400
Department of Design
Time: Mondays from 2:00 to 6:00
Location: 105 Hayes Hall
Zoom link: https://osu.zoom.us/j/96307483908?pwd=T09salpkSyt2NWhROVAyOGFjTWdMdz09

Instructor: Liz Sanders, PhD, Associate Professor
Email: sanders.82@osu.edu
Office Hours: By appointment in 230 Hayes Hall

Background
Campus Partners unveiled a Master Plan in 2015 to create a new "front door" to the OSU campus on the east side of High Street between 14th and 17th Avenues opposite the Wexner Center for the Arts and the Ohio Union. 15 + High is anticipated for completion by the end of 2022.

But what are the plans for the residential areas beyond 15 + High? Who will live there in the future and how do they want to live? These areas include the neighborhoods east of High Street all the way to the railroad tracks, bounded by Hudson Street on the north and 11th Avenue on the south. There is also a residential area north of campus (west of High Street, bounded by Lane Avenue on the south, Hudson Street on the north, with the Olentangy River on the east) that will be explored. Together, we will refer to these areas as "Beyond 15 + High."

Course Goals
We will work in collaborative teams to explore what life could be like for the people who will live in these neighborhoods in the future (10 to 15 years from now). We will do so by engaging directly with people using a co-design approach. Our co-designers will include current residents as well as others who could imagine living there in the future. We will engage in a participatory exploration of future scenarios of use for people who will live in the residential areas beyond 15th + High.

But what will happen after the course is over? Will our process and/or outcomes have an impact on the future? Will we be able to ensure that the work continues in the hands of the co-designers and other key stakeholders?

Learning Objectives
The graduate students will:

- Learn from academic and practice-based experts in city and regional planning, environmental science, architecture and landscape architecture,
- Engage in exploratory research activities in the front-end of the design process with a participatory mindset,
- Explore and learn to use a range of physical and virtual methods, tools and applications.
- Participate as a team member on a challenge with potential for social impact in the future,
- Explore design concepts together with current and future residents using various means of

generating, and communicating ideas, concepts and/or solutions.
- Learn more about off-campus residential opportunities and community-based activities.

Campus Safety Requirements

*"Health and safety requirements: All students, faculty and staff are required to comply with and stay up to date on all university safety and health guidance (*https://safeandhealthy.osu.edu*), which includes wearing a face mask in any indoor space and maintaining a safe physical distance at all times. Non-compliance will result in a warning first, and disciplinary actions will be taken for repeated offenses."*

Schedule: The outline below shows the overall plan and flow of events for the semester. Since this is a hands-on studio, events may change as we go. More specific information will be posted on Canvas as the plan unfolds.

Dates	**What we will do in class**
January 10	• Introductions and course overview • Co-design: Mindset, approach, methods, tools and materials • Begin to scope the problem/opportunity space • Guest speaker at 4:00: Keith Myers is Vice President, Planning, Architecture and Real Estate at OSU and Chair of the Campus Partners Board. He will talk about the design and development of the 15+HIGH • Tools for discovery: ArcGIS, Dovetail, SocialPinpoint, etc. • *Homework for the January 24: Neighborhood Walks* • *Homework for January 31: Read "A City is not a Computer"*
January 17	**Martin Luther King Day: No class**
January 24	• Guest speaker at 2:00: Jason Reece is an Assistant Professor of City and Regional Planning at the Knowlton School and a faculty affiliate at The Kirwan Institute for the Study of Race & Ethnicity. • Partner teams present their Neighborhood Walks • Generate and collect ideas for the team projects
January 31	• Discuss *A City is not a Computer* • Guest speaker at 3:00: Lily Mank is a licensed Landscape Architect and current doctoral fellow studying Environmental Sciences at OSU. • Discuss and prioritize ideas for the team projects • Form 4 to 5 teams around the prioritized project topics
February 7	• Teams present objective, focus and scope for their topic • Discuss opportunities for the final summary documentation • Guest speaker at 5:00: Josh Tomey is Director of Design at MKC Architects
February 14	• Teams present progress to date and share challenges • Teams work on their projects
February 21	• Teams present progress to date and share challenges • Teams work on their projects

February 28	• Teams present progress to date and share challenges • Teams work on their projects
March 7	• Teams present progress to date and share challenges • Teams work on their projects
March 14	**Spring Break: No class**
March 21	• **Preliminary team presentations** • Discuss opportunities for the final summary documentation and decide on an approach • Teams work on their projects
March 28	• Teams present progress to date and share challenges • Teams work on their projects
April 4	• Individual project presentations from 2:00 to 4:00 • Teams work on their projects
April 11	• Individual project presentations from 2:00 to 4:15 • Teams work on their projects • **Individual project documents are due April 11**
April 18	• Discuss progress and next steps on the **final summary documentation** • Teams work on their projects
April 25	• **Final team project presentations in 105 Hayes Hall.** • **Team project documentation is due April 29** • **Final summary documentation is due April 29**

Required Book
Mattern, Shannon (2021) *A city is not a computer: Other urban intelligences*, Princeton University Press, Princeton NJ.

Required Reading
Note: This paper can be found on Canvas. Others may be posted as they become relevant to the topics of the team projects.

Alexander, C. (1965) A city is not a tree. *Architectural Forum*, Vol 122, No 1, April 1965, pp 58-62. *(Alexander_1965)*

Recommended Books
Alexander, C. et al., 2015, *A city is not a tree*. Portland: Sustasis Press.

Alexander, C., Ishikawa, S., & Silverstein, M. (1977). *A pattern language: Towns, buildings, construction.* New York: Oxford University Press.

de la Peña, D., Allen, D.J., Hester R.T. Jr, Hou, J., Lawson, L.J. and McNally, M.J. (edited by) (2017), *Design as democracy: Techniques for collective creativity*, Washington, DC, Island Press.

Recommended Readings

Note: The papers listed below can be found on Canvas. Others will be posted as they become relevant to the topics of the team projects.

Alexander, Christopher (2003) "New concepts in complexity theory arising from studies in the field of architecture: A response by Christopher Alexander." *Katarxis Nº 3: New Science, New Urbanism, New Architecture?* 3, No. 3. *(Alexander_2003_New_Concepts)*

Ajayakumar, J., Curtis A., Smith, S. and Jacqueline Curtis, J. (2019) The use of geonarratives to add context to fine scale geospatial research, *International Journal of Environmental Research and Public Health*, 16, 515. *(Ajayakumar_Curtis_Smith_Curtis_2019)*

Björgvinsson, E., Ehn, P. and Hillgren, P (2012) Design things and design thinking: Contemporary participatory design challenges, *Design Issues*: Volume 28, Number 3. *(Björgvinsson_Ehn_Hillgren_2012)*

Calvo, M. and De Rosa, A. (2017) Design for social sustainability. A reflection on the role of the physical realm in facilitating community co-design. *Design for Next, 12th EAD Conference*, Sapienza University of Rome, 12-14 April 2017. *(Calvo_DeRosa_2017)*

Fassi, D., Laura Galluzzo, L. and Rogel, L. (2016) Hidden public spaces: When a university campus becomes a place for communities. *2016 Design Research Society 50th Anniversary Conference*, 27-30 June 2016, Brighton UK. *(Fassi_Galluzzo_Rogel_2016)*

Jamonnak, S., Zhao, Y., Curtis, A., Al-Dohuki, S., Ye, X., Kamw, F. and Yang, J. (2020) GeoVisuals: A visual analytics approach to leverage the potential of spatial videos and associated geonarratives, *International Journal of Geographical Information Science,* Vol. 34, No. 11, 2115–2135. *(Jamommak_etal_2020)*

Selloni, D. and Cantu, D. (2013) From engaging to empowering people: A set of co-design experiments with a service design perspective, Uploaded by Nesta on Dec 16, 2013. (Selloni_Cantu_2013)

Van Waart, P., De Bont, C.and Mulder, I. (2015) Participatory prototyping for future cities, *Participatory Innovation Conference 2015*, The Hague, The Netherlands. *(VanWaart_DeBont_Mulder_2015)*

Other Useful and Inspirational Resources

Note: The documents listed below can be found on Canvas. Others will be posted as they become relevant to the topics of the team projects.

McKercher, K.A. (2020) *Mindsets for Co-Design*. BeyondStickyNotes.com. *(McKercher_2020)*

NESTA: The Collective Intelligence Design Playbook. Tools, tactics and methods to harness the power of people, data and technology to solve global challenges CREATED BY Nesta's Centre for Collective Intelligence Design. *(NESTA_Playbook.pdf)*

MKSK with Campus Partners (date?) *15th Avenue & High Street Urban Framework Plan. (15th+&+High+Urban+Framework+Plan.pdf)*

Undergraduate Student Government's Student Affairs Committee, *The Ohio State University Renter's Guide,* 2019-2020 version. *(OSU_USG_Renting_Guide_2019.pdf)*

Course Evaluation
Students will be evaluated based on one individual assignment, the team project, and class participation. Since this is a hands-on project course, class time will primarily be devoted to team meetings and/or co-design sessions. Students are expected to attend and participate in every class. Please let me know ahead of time if you have to miss a class. Assignments must be submitted on the day they are due. Assignments turned in late will be marked down an entire grade (e.g., B to C) for each day they are late.

There will be 100 possible grade points distributed as follows:
- Individual assignment: 20
- Team project presentation and documentation: 70
- Class participation: 10

Academic misconduct
It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct **http://studentlife.osu.edu/csc/**.

Disability services

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: **slds@osu.edu**; 614-292-3307; **slds.osu.edu**; 098 Baker Hall, 113 W. 12th Avenue**.**

Mental health
As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting ccs.osu.edu or calling 614-292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273-TALK or at suicidepreventionlifeline.org.

Sexual misconduct
Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at http://titleix.osu.eduor by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at titleix@osu.edu

Diversity
The Ohio State University affirms the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. We are committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among each member of our community; and encourages each individual to strive to reach his or her own potential. Discrimination against any individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.

Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender identity and expression, and nationalities. Class rosters are provided to the instructor and may include the student's legal name unless changed via the University Name Change policy. I will gladly honor your request to address you by another name or gender pronoun. Please advise me of this early in the semester so that I may make appropriate changes to my records.

BEYOND 15+HIGH The team project

Overview
The course is built around the team projects. Students will generate ideas for the projects and 4 to 5 teams will be formed around the topics with the most collective interest. We will work to ensure that the selected set of topics represent a broad coverage of the environmental landscape and the connected social fabric. Once the teams are decided upon, there will be ample class time devoted to team collaboration.

We will have weekly progress presentations by each team. These short, informal presentations will provide the teams with useful feedback and support. The iterative sharing will also help in the planning and coordination of the final summary documentation across all teams.

Each co-design team will make a preliminary presentation of their progress on March 21 and a final presentation of their project on April 25. The audience for the final presentation may include key stakeholders and co-designers who took part in the projects. The guest lecturers will also be invited to attend.

The content for the final presentation for each team should include:
- Objective(s)
- Background about the topic
- Overview of the process (including challenges and changes to the original plan)
- The role of co-design in the process
- Reflection on the co-design process
- Deliverables
- Team members and their contributions

The content for the final documentation for each team should include:
- Table of contents or another form of navigation
- The final presentation
- All working materials (e.g., raw data, interview guides, consent forms, photos, videos, etc.) organized in such a way that someone not involved in this course could tell what you did at each step of the process. Your document could be on MIRO or GoogleDocs or some other platform.

Final summary documentation
- The form and format of the final summary documentation that integrates all projects onto one “platform” will be determined collaboratively.
- All teams are expected to contribute to the final summary and, if relevant, the individual projects will also be included.

BEYOND 15+HIGH The individual project

Overview
The individual project will give students the opportunity to explore a topic, tool, method or emerging concept in more detail. The individual project content must be related to the course goal, i.e., exploration of future scenarios of use for those who will live in the residential areas beyond 15th Ave. and High Street.

This course goal is very broad and so the opportunities for the individual project are endless. You may want to choose a project that has a connection to your thesis or dissertation research. Or you may want to choose a project that relates directly to your team's project and serves to enrich it. Since there is so much latitude in the individual project, please meet with me to talk about your ideas before you get started.

The individual project counts for 20% of your grade for the course.

Deliverables
You are encouraged to explore alternative means of communicating and sharing your project with the class. Here are some ideas but other formats can be discussed as well:

- A story about how people will use the idea/concept you have explored
- A sketch or set of sketches to communicate the project process and deliverables
- A storyboard of an experience, event or process
- A video sketch
- A low-fidelity 2D or 3D prototype
- A provotype (provocative prototype)
- An enactment or performance (live or video-taped)
- Facilitation of an event
- Etc.

Presentation and Documentation
You will make a short (10 to 15 minutes) presentation to the class of your individual project on either April 4 or 11. You will also produce documentation for your individual project that is due on April 11. The form of documentation will vary based on your project content and the type of deliverable you choose to work with.

We will also want to incorporate your individual project results in the final summary documentation, as relevant.

List of the colleges and departments that either have provided concurrence of did not respond and for which concurrence is assumed.

Department	college	concurrence
Near Eastern & South Asian Languages and Cultures	ASC	received
Germanic Languages and Literatures	ASC	received
Arts Administration, Education and Policy	ASC	received
Plant Pathology	CFAES	received
Sociology	ASC	received
Electrical and Computer Engineering	Engineering	received
Civil and Environmental Engineering	Engineering	received
Food, Agriculture and Biological Engineering	Engineering	received
History	ASC	received
Communication	ASC	received
Integrated Systems Engineering	Engineering	received
Food, Agricultural and Biological Engineering	CFAES	received
Food Science and Technology	CFAES	received
Advanced Computing Center for the Arts and Design	ASC	received
Design	ASC	received

College (and contact)	concurrence
CFAES: Jeanne Osborne.2 (Assistant Dean)	received
Engineering: Dave Tomasko.1 (Associate Dean)	assumed
Public Health: Michael Bisesi.12 (Associate Dean)	assumed
Business: Andrea Prud'homme (prudhomme.3) (Associate Dean)	assumed
Law: Anne Ralph.52 (Associate Dean)	received
John Glenn College of Public Affairs: Rob Greenbaum.3 (Associate Dean)	assumed
Medicine: Daniel Clinchot.1 (Vice Dean)	assumed
Veterinary Science: Emma Read.65 (Associate Dean)	received
Nursing: Cindy Anderson.2765 (Associate Dean)	received
Social Work: Michelle Johnson-Motoyama.1	received
EHE: pete locascio.7 (director)	received
Pharmacy: Katherine Kelley.168 (Associate Dean)	received

Emails sent for the concurrence for Graduate Interdisciplinary Specialization (GIS) in Wicked Science.

Concurrence Request for GIS Wicked Science

VB

Vankeerbergen, Bernadette <vankeerbergen.1@osu.edu> Friday, July 15, 2022 at 13:0(

To: _ASC NMS Chairs Directors; _ASC SBS-Chairs; _ASC AH-Chairs-Directors

Cc: Moritz, Mark

GIS Wicked Science...
1.4 MB

Download All • Preview All

Dear Chairs and Directors,

Please find attached a proposal for a new graduate interdisciplinary specialization from the Department of Anthropology: "Wicked Science."

The department is seeking concurrence for the new GIS. Please email your responses/concurrences to Professor Mark Moritz (moritz.42@osu.edu) in the Department of Anthropology. ***Responses are due within two weeks***. Concurrence will be assumed if no response is received within two weeks (August 1, 2022).

Many thanks,
Bernadette

THE OHIO STATE UNIVERSITY

Bernadette Vankeerbergen, Ph.D.
Assistant Dean, Curriculum
College of Arts and Sciences
306B Dulles Hall, 230 Annie & John Glenn Ave.
Columbus, OH 43210
Phone: 614-688-5679
http://asccas.osu.edu

Concurrence Request for GIS Wicked Science

MM

Moritz, Mark <moritz.42@osu.edu>

Friday, July 15, 2022 at 14:26

To: Bisesi, Michael

GIS Wicked Science...
1.6 MB

Download All • Preview All

Dear Michael,

Please find attached a proposal for a new Graduate Interdisciplinary Specialization (GIS) in Wicked Science that my colleagues and I developed.

We are seeking concurrence for the new GIS. Please email your responses/concurrences to Professor Mark Moritz (moritz.42@osu.edu) in the Department of Anthropology. Responses are due within two weeks. Concurrence will be assumed if no response is received within two weeks (August 1, 2022).

Many thanks,

Mark

--

Dr. Mark Moritz
Professor and Chair of the Graduate Studies Committee
Department of Anthropology
614-247-7426
https://mlab.osu.edu

Concurrence Request for GIS Wicked Science

MM

Moritz, Mark <moritz.42@osu.edu>
To: Kelley, Katherine

Friday, July 15, 2022 at 14:27

Dear Katherine,

Please find attached a proposal for a new Graduate Interdisciplinary Specialization (GIS) in Wicked Science that my colleagues and I developed.

We are seeking concurrence for the new GIS. Please email your responses/concurrences to Professor Mark Moritz (moritz.42@osu.edu) in the Department of Anthropology. Responses are due within two weeks. Concurrence will be assumed if no response is received within two weeks (August 1, 2022).

Many thanks,

Mark
--
Dr. Mark Moritz
Professor and Chair of the Graduate Studies Committee
Department of Anthropology
614-247-7426
https://mlab.osu.edu

Concurrence Request for GIS Wicked Science

MM

Moritz, Mark <moritz.42@osu.edu>

Friday, July 15, 2022 at 14:29

To: Anderson, Cindy M.

Dear Cindy ,
Please find attached a proposal for a new Graduate Interdisciplinary Specialization (GIS) in Wicked Science that my colleagues and I developed.
We are seeking concurrence for the new GIS. Please email your responses/concurrences to Professor Mark Moritz (moritz.42@osu.edu) in the Department of Anthropology. Responses are due within two weeks. Concurrence will be assumed if no response is received within two weeks (August 1, 2022).
Many thanks,
Mark
--
Dr. Mark Moritz
Professor and Chair of the Graduate Studies Committee
Department of Anthropology
614-247-7426
https://mlab.osu.edu

Concurrence Request for GIS Wicked Science

MM

Moritz, Mark <moritz.42@osu.edu> Friday, July 15, 2022 at 14:29

To: Read, Emma K.

GIS Wicked Science...
1.6 MB

Download All • Preview All

Dear Emma,
Please find attached a proposal for a new Graduate Interdisciplinary Specialization (GIS) in Wicked Science that my colleagues and I developed.
We are seeking concurrence for the new GIS. Please email your responses/concurrences to Professor Mark Moritz (moritz.42@osu.edu) in the Department of Anthropology. Responses are due within two weeks. Concurrence will be assumed if no response is received within two weeks (August 1, 2022).
Many thanks,
Mark
--
Dr. Mark Moritz
Professor and Chair of the Graduate Studies Committee
Department of Anthropology
614-247-7426
https://mlab.osu.edu

Concurrence Request for GIS Wicked Science

MM

Moritz, Mark <moritz.42@osu.edu>

Friday, July 15, 2022 at 14:32

To: Clinchot, Daniel

GIS Wicked Science...
1.6 MB

Download All • Preview All

Dear Daniel,

Please find attached a proposal for a new Graduate Interdisciplinary Specialization (GIS) in Wicked Science that my colleagues and I developed.

We are seeking concurrence for the new GIS. Please email your responses/concurrences to me (moritz.42@osu.edu). Responses are due within two weeks. Concurrence will be assumed if no response is received within two weeks (August 1, 2022).

Many thanks,

Mark

--

Dr. Mark Moritz
Professor and Chair of the Graduate Studies Committee
Department of Anthropology
614-247-7426
https://mlab.osu.edu

Concurrence Request for GIS Wicked Science

MM

Moritz, Mark <moritz.42@osu.edu>

Friday, July 15, 2022 at 14:33

To: Greenbaum, Rob

GIS Wicked Science...
1.6 MB

Download All • Preview All

Dear Rob,

Please find attached a proposal for a new Graduate Interdisciplinary Specialization (GIS) in Wicked Science that my colleagues and I developed.

We are seeking concurrence for the new GIS. Please email your responses/concurrences to me (moritz.42@osu.edu). Responses are due within two weeks. Concurrence will be assumed if no response is received within two weeks (August 1, 2022).

Many thanks,

Mark

--

Dr. Mark Moritz
Professor and Chair of the Graduate Studies Committee
Department of Anthropology
614-247-7426
https://mlab.osu.edu

Concurrence Request for GIS Wicked Science

MM

Moritz, Mark <moritz.42@osu.edu>

Friday, July 15, 2022 at 14:34

To: Ralph, Anne E.

GIS Wicked Science...
1.6 MB

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Dear Anne,

Please find attached a proposal for a new Graduate Interdisciplinary Specialization (GIS) in Wicked Science that my colleagues and I developed.

We are seeking concurrence for the new GIS. Please email your responses/concurrences to me (moritz.42@osu.edu). Concurrence will be assumed if no response is received within two weeks (August 1, 2022).

Many thanks,

Mark

--

Dr. Mark Moritz
Professor and Chair of the Graduate Studies Committee
Department of Anthropology
614-247-7426
https://mlab.osu.edu

Concurrence Request for GIS Wicked Science

MM

Moritz, Mark <moritz.42@osu.edu>

Friday, July 15, 2022 at 14:35

To: Prud'homme, Andrea

GIS Wicked Science...
1.6 MB

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Dear Andrea,

Please find attached a proposal for a new Graduate Interdisciplinary Specialization (GIS) in Wicked Science that my colleagues and I developed.

We are seeking concurrence for the new GIS. Please email your responses/concurrences to me (moritz.42@osu.edu). Concurrence will be assumed if no response is received within two weeks (August 1, 2022).

Many thanks,

Mark

--

Dr. Mark Moritz
Professor and Chair of the Graduate Studies Committee
Department of Anthropology
614-247-7426
https://mlab.osu.edu

Concurrence Request for GIS Wicked Science

MM

Moritz, Mark <moritz.42@osu.edu>

Friday, July 15, 2022 at 14:36

To: Tomasko, David

GIS Wicked Science...
1.6 MB

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Dear David,
Please find attached a proposal for a new Graduate Interdisciplinary Specialization (GIS) in Wicked Science that my colleagues and I developed.

We are seeking concurrence for the new GIS. Please email your responses/concurrences to me (moritz.42@osu.edu). Concurrence will be assumed if no response is received within two weeks (August 1, 2022).
Many thanks,
Mark
--
Dr. Mark Moritz
Professor and Chair of the Graduate Studies Committee
Department of Anthropology
614-247-7426
https://mlab.osu.edu

Concurrence Request for GIS Wicked Science

MM

Moritz, Mark <moritz.42@osu.edu>

Friday, July 15, 2022 at 14:37

To: Osborne, Jeanne

GIS Wicked Science...
1.6 MB

Download All • Preview All

Dear Jeanne,

Please find attached a proposal for a new Graduate Interdisciplinary Specialization (GIS) in Wicked Science that my colleagues and I developed.

We are seeking concurrence for the new GIS. Please email your responses/concurrences to me (moritz.42@osu.edu). Concurrence will be assumed if no response is received within two weeks (August 1, 2022).

Many thanks,

Mark

--

Dr. Mark Moritz
Professor and Chair of the Graduate Studies Committee
Department of Anthropology
614-247-7426
https://mlab.osu.edu

Concurrence Request for GIS in Wicked Science

MM

Moritz, Mark <moritz.42@osu.edu>

Tuesday, July 19, 2022 at 12:36

To: Locascio, Pete

GIS Wicked Science...
1.6 MB

Download All • Preview All

Dear Pete,

Please find attached a proposal for a new Graduate Interdisciplinary Specialization (GIS) in Wicked Science that my colleagues and I developed.

We are seeking concurrence for the new GIS. Please email your responses/concurrences to me (moritz.42@osu.edu). Concurrence will be assumed if no response is received within two weeks (August 1, 2022).

Many thanks,

Mark

--

Dr. Mark Moritz
Professor and Chair of the Graduate Studies Committee
Department of Anthropology
614-247-7426
https://mlab.osu.edu

Concurrence Request for GIS in Wicked Science

MM

Moritz, Mark <moritz.42@osu.edu>

Sunday, July 17, 2022 at 14:47

To: Johnson-Motoyama, Michelle A.

GIS Wicked Science...
1.6 MB

Download All • Preview All

Dear Michelle,

Please find attached a proposal for a new Graduate Interdisciplinary Specialization (GIS) in Wicked Science that my colleagues and I developed.

We are seeking concurrence for the new GIS. Please email your responses/concurrences to me (moritz.42@osu.edu). Concurrence will be assumed if no response is received within two weeks (August 1, 2022).

Many thanks,

Mark

--

Dr. Mark Moritz
Professor and Chair of the Graduate Studies Committee
Department of Anthropology
614-247-7426
https://mlab.osu.edu

Emails received for the concurrence for Graduate Interdisciplinary Specialization (GIS) in Wicked Science.

Subject: Re: Wicked Science GIS
Date: Wednesday, August 10, 2022 at 16:31:56 Eastern Daylight Time
From: Munch, Fabienne
To: Moritz, Mark, Proulx, Sebastien, Melsop, Susan, Matheny, Rebekah
Attachments: image001.png, GIS Wicked Science proposal 20220722[V2].docx

Dear Mark,

May you please just change one detail in your document? (see attached: the 6400 course needs to appear under "Co-Design Studio")
With this change, we are in a position to give you concurrence and are quite pleased with this outcome,

Best,
Fabienne

THE OHIO STATE UNIVERSITY

Fabienne Munch, PhD
Professor and Department Chair

The Ohio State University
College of Arts and Sciences
Department of Design
100 Hayes Hall
108 North Oval Mall, Columbus, OH 43210
6142478943 Office
munch.31@osu.edu

Pronouns: she/her/hers

From: "Moritz, Mark" <moritz.42@osu.edu>
Date: Friday, August 5, 2022 at 12:58 PM
To: "Munch, Fabienne" <munch.31@osu.edu>, "Proulx, Sebastien" <proulx.12@osu.edu>, "Melsop, Susan" <melsop.3@osu.edu>, "Matheny, Rebekah" <matheny.89@osu.edu>
Subject: Wicked Science GIS

Dear all,

Many thanks for taking the time to meet with me this morning. It was a pleasure. Here is a very short summary of the changes in the GIS proposal (see attachment).

1. We have added a list of recommended courses that students can take if they are interested, for example, DESIGN 5800.01 Industrial Design Seminar and DESIGN 6100 Methods and Tools for Conducting Design Research, as well as courses from other departments.
2. One of the problems of the earlier proposal was that students from public policy could not complete the GIS because PUBAFRS 5620: Rapid Innovation for Public Impact was not cross-listed and one of the GIS requirements is that students take 9 credit hours outside their department.

Subject: Re: Concurrence Request for GIS Wicked Science
Date: Monday, August 1, 2022 at 07:18:00 Eastern Daylight Time
From: Greenbaum, Rob
To: Moritz, Mark, Yi, Hongtao
Attachments: image001.png

Hi Mark,

I think I sent you the most up-to-date syllabus for the 7572 class a couple of weeks ago.

Thanks for adding it to the recommended list, but I can't imagine that students already adding on the GIS to their program will have a lot of room to add on more electives that do not count to their degrees.

As for cross-listing the rapid innovation course, we only cross-list courses when we have some reciprocal agreement with another department for them to cross-list one of their classes. That may be possible, but we've been struggling managing enrollment agreements with all the cross-listed classes that we currently have.

Rob

From: Moritz, Mark <moritz.42@osu.edu>
Sent: Saturday, July 30, 2022 7:42:48 PM
To: Yi, Hongtao <yi.201@osu.edu>; Greenbaum, Rob <greenbaum.3@osu.edu>
Subject: Re: Concurrence Request for GIS Wicked Science

Dear Hongtao,

Thanks for your email and suggestions.

For now, we want to keep the list of required courses as is. If 5620 Rapid Innovation is no longer taught for whatever reason, we will have to find another course that meets the specific learning outcomes. There are courses in Design that are similar to 5620 Rapid Innovation and that cover these specific learning outcomes better than PUBAFRS 7505.

We have updated the GIS proposal and added a list of recommended courses, which includes PUBAFRS 7505: Wicked Policy Problems and PUBAFRS 7572 Policy Simulation and Modeling (as well as other courses from other departments).

Both ANTHROP/EEOB 5505 and EEOB/ANTHROP 5510 are cross-listed. I have updated that in the GIS proposal to make that clearer. We are looking into cross-listing PUBAFRS 5620 to make sure that graduate students in Public Policy and complete the GIS in Wicked Science.

Also, could you please send me a recent syllabus for PUBAFRS 7572 Policy Simulation and Modeling? I have one from Anand from a couple of years back. I am also interested in listing other relevant courses in our GIS proposal, so if there are other courses that would be good recommended courses for the program, please send me the syllabi.

Best wishes,

Mark

RE: Concurrence Request for GIS in Wicked Science

JM

Johnson-Motoyama, Michelle A. <johnson-motoyama.1@osu.edu>

Yesterday at 00:48

To: Moritz, Mark

Dear Mark,

Thank you for your proposal and my apologies for the delayed response due to summer travel. I realize that my concurrence has already been assumed due to the deadline. However, I'd like to express my enthusiasm for this exciting offering for students. Many thanks to you and your colleagues for developing this timely and relevant specialization.

Kind regards,

Michelle

THE OHIO STATE UNIVERSITY

Michelle Johnson-Motoyama, Ph.D., M.S.W.
Professor & Interim Associate Dean for Academic Affairs
College of Social Work
325 Stillman Hall, 1947 College Road, Columbus, OH 43210
614-688-2491 Office
johnson-motoyama.1@osu.edu https://csw.osu.edu
Pronouns: She/her/hers

Re: Concurrence Request for GIS Wicked Science

Hoet, Armando <hoet.1@osu.edu> Yesterday at 10:44

To: Moritz, Mark; **Cc:** Green, Patrick; Read, Emma K.; Berrian, Amanda

Dear Mark and Team,

Thank you for including us in this concurrence review. We revised the GIS proposal and we found it to be very interesting and we even hope that our own students decide to pursue it.

We don't see any conflicts with the courses, in fact, there is even some synergy, especially with the topics of zoonotic diseases we deliver, as indeed their complex issue and major wicked problems (COVID-19 and Monkeypox now for just a few recent examples).

We are actually developing a leadership seminar with former CVM Dean and CDC National Director on Zoonoses, Dr. Lonnie King, focusing on One Health leadership ("Leadership at the Convergence") that may be of interest to students pursuing this GIS.

Additionally, we hope your students will look into some of our courses as they may be beneficial.

Let us know if you need anything else from us.

Good luck in this effort.

Have a good day.

PS: I will be very curious in a year or so from now to see what is the reception of this GIS in the student body.

Armando E Hoet, DVM, PhD, Dipl ACVPM
AAVMC One Health Scholar
Director, Veterinary Public Health Program
Professor
Department of Veterinary Preventive Medicine
College of Veterinary Medicine
The Ohio State University
A188 Sisson Hall
1920 Coffey Road
Columbus, Ohio 43210
614-292-0684
614-292-4142 (fax)
http://vet.osu.edu/education/veterinary-public-health-program

Re: Concurrence Request for GIS Wicked Science

PM

Palazzi, Maria <palazzi.1@osu.edu>

To: Moritz, Mark

Today at 20:46

Dear Mark,
ACCAD is happy to provide concurrence for the GIS Wicked Science.
I do recommend that the GIS planning group speak with the Department of Design, who is already offering a number of similar courses in problem solving that might benefit this proposal.
Maria Palazzi

The *Department of Design* values human health and happiness... including the need for personal time for its faculty and students. Replies to email received on weekends or after 5 pm and before 8 am on weekdays are not required or encouraged.

THE OHIO STATE UNIVERSITY

Maria Palazzi
Professor | Department of Design
Director | Advanced Computing Center for the Arts and Design
331 Sullivant Hall, 1813 N. High Street, Columbus, OH 43210
614-292-2406 Office
palazzi.1@osu.edu osu.edu

Pronouns: She/Her/Hers
Learn About Pronouns

Concurrence Request for GIS Wicked Science

Osborne, Jeanne <osborne.2@osu.edu> Today at 15:32

To: Moritz, Mark

GIS Wicked Science...
1.6 MB

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Dear Dr. Moritz,

On behalf of the College of Food, Agricultural, and Environmental Sciences, please accept concurrence for the proposal for a new Graduate Interdisciplinary Specialization from the Department of Anthropology: "Wicked Science". This proposal has been reviewed by academic units within the CFAES, and concurrence with the following considerations is provided:

- Reconsider use of the acronym GIS. While this represents the University-level label, the frequency with which the term appears in the proposal could make it confusing for students who are used to GIS referring to Geographic Information System. Perhaps consider this potential point of confusion in informational and promotional materials.
- Reconsider the name "Wicked Science" (which is an Australian Television Series):
    - From an informational and promotional perspective, while this phrase is relevant and understandable now, the question was raised whether it will have the same weight and meaning in 5-10 years.
    - Considering the vague definition of "Wicked Problems" as problems that are: (1) dynamic, complex systems with many interdependencies; and (2) stakeholders have different values, interests and conceptions of the problem and its solution, the proposal would be stronger by providing a clearer definition and a consideration of a more informative name and/or more emphasis on methodology for solving complex problems where stakeholder values affect solutions.
- The Department of Anthropology is encouraged to consider a future online offering of this specialization

The CFAES supports this proposal; this new Graduate Interdisciplinary Specialization will likely be of interest to some graduate students within the CFAES and SENR.

Please let me know if you need any additional information.

Take care,

Jeanne

THE OHIO STATE UNIVERSITY

Jeanne M. Osborne | *Pronouns: She, Her, Hers*
Assistant Dean for Academic Affairs
College of Food, Agricultural, and Environmental Sciences
100E Agricultural Administration, 2120 Fyffe Rd.
Columbus, OH 43210
Tel: 614-292-1734
Fax: 614-292-1218
e-mail: Osborne.2@osu.edu

RE: Concurrence Request for GIS Wicked Science - deadline today at noon

Belury, Martha <belury.1@osu.edu> Today at 11:57

To: Osborne, Jeanne; Shearer, Scott A.; Sastry, Sudhir; Campanella, Osvaldo H.; +3 more

I knew this and forgot 😊. Thanks for clarifying. We still concur.

Martha Ann Belury, PhD, RDN
Carol S. Kennedy Professor, Nutrition
Interim Chair, Food Science and Technology

RE: Concurrence Request for GIS Wicked Science

CO

Campanella, Osvaldo H. <campanella.20@osu.edu> Today at 11:06

To: Osborne, Jeanne; Lyvers Peffer, Pasha; Kinder, James; Strange, James P.; +13 more

Dear Jeanne

My apologies for the delay in getting back to you. I read the information on the proposed course and found it extremely interesting and with a significant impact on the education of our FST graduate students. The FST Graduate Committee concurs with this proposed course

Osvaldo H. Campanella, Professor
Graduate Students Committee Chair
Carl E. Haas Endowed Chair in Food Industries
Department of Food Science and Technology
235 Parker Building, 2015 Fyffe Road
Columbus, OH 43010
Phone: 614-247-7646
Email: campanella.20@osu.edu
THE OHIO STATE UNIVERSITY

RE: Concurrence Request for GIS Wicked Science - deadline today at noon

SS

Sastry, Sudhir <sastry.2@osu.edu> Today at 10:57

To: Osborne, Jeanne; Shearer, Scott A.; Belury, Martha; Campanella, Osvaldo H.; +3 more

Jeanne:

We (FABE) concur.

Sudhir

RE: Concurrence Request for GIS Wicked Science - deadline today at noon

Belury, Martha <belury.1@osu.edu> Today at 1

To: Osborne, Jeanne; Shearer, Scott A.; Sastry, Sudhir; Campanella, Osvaldo H.; +3 more

Good morning, Jeanne,
Thank you for your patience with my delay. The FST academic affairs committee concurs with the possibility of WICKED SCIENCE as a new course.
Martha

Martha Ann Belury, PhD, RDN
Carol S. Kennedy Professor, Nutrition
Interim Chair, Food Science and Technology

Re: Concurrence Request for GIS Wicked Science - deadline today at noon

RL

Rodriguez-Saona, Luis <rodriguez-saona.1@osu.edu> Today at 10:27

To: Osborne, Jeanne; Shearer, Scott A.; Sastry, Sudhir; Belury, Martha; +3 more

Hi Jeanne:

FST supports the proposal and provides concurrence. A few comments raised by our academic affairs committee were adding more STEM instructors to courses and enhance the multidisciplinary nature of the courses by including guest speakers.

Thanks,

Luis

Re: Concurrence Request for GIS Wicked Science - deadline today at noon

KS

Khanal, Sami <khanal.3@osu.edu> Today at 09:31

To: Osborne, Jeanne; Shearer, Scott A.; Sastry, Sudhir; Belury, Martha; +3 more

Jeanne,

We support the proposal. Btw, we were asked to provide a concurrence for this proposal through the College of Engineering as well:) Thanks.

Best Regards,
Sami

RE: Concurrence Request for GIS Wicked Science

YH

Yi, Hongtao <yi.201@osu.edu>

Tuesday, July 26, 2022 at 14:3

To: Moritz, Mark; Greenbaum, Rob

7505 Syllabus SP22... 1 MB

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Dear Mark,
Thank you again for meeting with Rob and me last week. It was exciting to learn about the background, motivation, and curriculum design of the GIS wicked science.
As part of the administrative process, we had an informal discussion among several members of the Graduate Studies Committee. While we are overall very supportive of the GIS and its curriculum design, we also would like to raise a couple of suggestions for you to consider.

A: As we mentioned in our initial chat, one of the main goals for the Associate Dean for Curriculum and Graduate Studies Committee is to ensure the robustness and resilience of our graduate programs. The Rapid Innovation course is a popular course that is heavily dependent on existing instructors. To ensure that the Glenn College is still able to make meaningful contribution to the GIS wicked science program should turnovers happen to the course instructors, we propose the following changes to the curriculum design:

The curriculum consists of four required courses and a total of 11 credits (see syllabi attached). The courses are cross-listed across multiple departments, which allows students from any department to complete the interdisciplinary specialization.
1. ANTHROP 5505: Wicked Science (3 credits) offered every spring
2. EEOB 5510: Interdisciplinary Team Science (3 credits) offered every autumn
3. PUBAFRS 5620: Rapid Innovation for Public Impact (4 credits), autumn and spring
   Or PUBAFRS 7505: Wicked Policy Problems (3 Credits), spring
4. ANTHROP 5515: Wicked Problems Capstone (1 credit), autumn and spring

B: Rob and I also just checked the handbook from the Graduate School. It seems that 9 hours must be outside a student's home department, so neither Anthropology students nor Glenn College students wouldn't be able to do this GIS. I wonder if you are aware of this.
https://gradsch.osu.edu/handbook/8-4-special-graduate-programs-graduate-minors-and-graduate-interdisciplinary

We hope that this makes the GIS wicked science program more robust.
Looking forward to working with you to advance the GIS wicked science.
Best
Hongtao

THE OHIO STATE UNIVERSITY

Hongtao Yi, Ph.D.
Associate Professor & Director of Graduate Professional Studies
John Glenn College of Public Affairs
310D Page Hall, 1810 College Rd, Columbus OH 43210
Email: yi.201@osu.edu he/him/his
http://glenn.osu.edu/faculty/glenn-faculty/yi/

From: Furterer, Sandy <furterer.6@osu.edu>
Sent: Friday, July 29, 2022 1:25 PM
To: Quinzon-Bonello, Rosario <quinzon-bonello.1@osu.edu>
Subject: RE: Concurrence Request for GIS Wicked Science

Hi Rosie,

I read through the GIS proposal in Wicked Science. It is a very interesting and valuable specialization and courses. Since I'm new to OSU, I'm not sure how these types of GIS' work, so I had a question as to whether there is an effort to allow some of these courses to be approved as technical electives within programs of study, to increase the number of students who could take the courses? Just curious.

Thanks,

Sandy Furterer, PhD, MBA
Professor of Practice
The Ohio State University
Dept. of Integrated Systems Engineering
1971 Neil Ave., Rm. 210 Baker Systems
Columbus, OH 43210
email: furterer.6@osu.edu

Hi Mark,

Please see EHE's concurrence response below from Dr. Ding in the Department of Teaching & Learning.

Thanks,

Pete Locascio
Interim Executive Director of Academic Advising and Student Services
Director of Curriculum Standards and Academic Policy
College of Education and Human Ecology Office of Academic Affairs
The Ohio State University
A100 PAES Building, 305 Annie and John Glenn Ave, Columbus, OH 43210
614-292-9261
locascio.7@osu.edu
ehe.osu.edu
Pronouns: he/him/his

From: Miranda, Antoinette <miranda.2@osu.edu>
Sent: Tuesday, July 26, 2022 10:56 AM
To: Locascio, Pete <locascio.7@osu.edu>
Subject: FW: Concurrence Request for GIS in Wicked Science

See response below.

From: Ding, Lin <ding.65@osu.edu>
Sent: Tuesday, July 26, 2022 10:53 AM
To: Miranda, Antoinette <miranda.2@osu.edu>; Wild, Tiffany <wild.13@osu.edu>
Subject: Re: Concurrence Request for GIS in Wicked Science

I don't see any overlap with our science education courses. Their proposed course is more about human factors and anthropological viewpoints toward general STEM (not STEM education). If anything, our colleagues in sociocultural education and inclusion may want to take a closer look at it.

Lin Ding, Ph.D.
Professor, Department of Teaching and Learning
Faculty Affiliate, Center on Education and Training for Employment
Faculty Affiliate, East Asian Studies Center
The Ohio State University
341 Arps Hall
1945 N. High St.
Columbus, OH 43210-1172

Email: ding.65@osu.edu
Telephone: (614) 688-8377 (Office)
Fax: (614) 292-7695

From: Garrett, Kelly <garrett.258@osu.edu>
Sent: Thursday, July 28, 2022 12:08 PM
To: Vankeerbergen, Bernadette <vankeerbergen.1@osu.edu>
Subject: RE: Concurrence Request for GIS Wicked Science

I write to offer the School of Communication's concurrence for GIS Wicked Science.

==========
R. Kelly Garrett, Ph.D.
Professor & Director | School of Communication | Ohio State University
614-292-0451 | http://rkellygarrett.com/
Pronouns: he/him/his

NSF's Convergence Accelerator
2021 Cohort Member

Re: Concurrence Request for GIS Wicked Science

Kelley, Katherine <kelley.168@osu.edu> Today at 16:56
To: Moritz, Mark

Dear Mark,
I am happy to provide concurrence for this GIS. It sounds really cool.
Kathy

Get Outlook for iOS

GIS Wicked Science (Anthro)

SB

Soland, Birgitte <soland.1@osu.edu> Yesterday at 22:39
To: Moritz, Mark; **Cc:** Levi, Scott

Dear Mark (if I may),

The History Department is happy to grant concurrence for this course. It sounds wonderful.

Best,
Birgitte

Birgitte Søland, Assoc. Prof.
Chair of Undergraduate Studies
Department of History
230 Annie and John Glenn Avenue
Columbus, Ohio 4320

FW: Concurrence Request for GIS Wicked Science

Quinzon-Bonello, Rosario <quinzon-bonello.1@osu.edu> Today at 16:47
To: Moritz, Mark

Response from

Food, Agriculture and Biological Engineering...

Thanks,
Rosie

From: Winston, Ryan J. <winston.201@osu.edu>
Sent: Tuesday, July 19, 2022 4:37 PM
To: Quinzon-Bonello, Rosario <quinzon-bonello.1@osu.edu>
Subject: Re: Concurrence Request for GIS Wicked Science

Hi Rosie,

This has been discussed among the FABE faculty over email. We do not feel the need to provide concurrence as we don't have faculty working in this exact area. That said, we are excited that the GIS is being proposed.

Thank you,

Ryan

Ryan Winston, PhD, PE
Assistant Professor
Department of Food, Agricultural, and Biological Engineering
Department of Civil, Environmental, and Geodetic Engineering
Core Faculty, Sustainability Institute
Ohio State University
winston.201@osu.edu
(614) 292-9354

RE: Concurrence Request for GIS Wicked Science

Quinzon-Bonello, Rosario <quinzon-bonello.1@osu.edu> Today at 15:14

To: Moritz, Mark; Tomasko, David

Hello Mark –

I understand now. I had to chat with a colleague to educated myself a bit more about GISs.

- Electrical and Computer Engineering concurred with the proposal.
- Civil and Environmental Engineering stated the proposal does not present any concurrence issues.

I will forward additional comments to you as I receive them.

Thanks,
Rosie

FW: Concurrence Request for GIS Wicked Science

Williams, Kristi <williams.2339@osu.edu> Today at 11:51

To: Moritz, Mark

GIS Wicked Science...
1.4 MB

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Dear Mark,

The Department of Sociology is happy to offer concurrence.

Best regards,
Kristi

Kristi Williams, PhD
Professor and Chair
Department of Sociology
238 Townshend Hall, 1885 Neil Avenue Mall, Columbus, OH 43210
6146883207 Office
williams.2339@osu.edu / sociology.osu.edu

Re: Concurrence Request for GIS Wicked Science

MT

Mitchell, Thomas <mitchell.815@osu.edu> Today at (

To: Osborne, Jeanne; Washburn, Shannon G.; Rumble, Joy N.; Haab, Timothy; +26 more

This is fine with Plant Pathology. We concur.

Thomas Mitchell, Ph.D.
Professor and Chair
Department of Plant Pathology
The Ohio State University
Columbus, OH
614-917-9053

From: Acuff, Joni E. <acuff.12@osu.edu>
Sent: Monday, July 18, 2022 8:26:14 AM
To: Vankeerbergen, Bernadette <vankeerbergen.1@osu.edu>
Subject: Re: Concurrence Request for GIS Wicked Science

AAEP offers concurrence.

Wicked Science

Holub, Robert C. <holub.5@osu.edu>
To: Moritz, Mark

Yesterday at 20:16

Dear Professor Moritz,
GLL is happy to support this course proposal.
Robert Holub

Robert C. Holub

Robert C. Holub
Ohio Eminent Scholar and Professor of German
Chair, Germanic Languages and Literatures
Adjunct Professor, Teaching Educational Policy and Leadership
340 Hagerty Hall
1775 South College Road
Columbus, OH 43210
Fax: 614-292-8510
Mobile: 510-316-0205
holub.5@osu.edu
http://press.princeton.edu/titles/10635.html
http://www.upenn.edu/pennpress/book/15881.html

RE: Concurrence Request for GIS Wicked Science

AC

Anderson, Cindy M. <anderson.2765@osu.edu>
To: Moritz, Mark

Yesterday at 17:00

Hi Mark,
We fully support and provide concurrence for this new GIS. It is greatly needed and likely to advance interprofessional engagement to solve the many wicked problems impacting our science.

If you need a more formal letter, I am happy to provide.

Best to you,
Cindy

Cindy Anderson, PhD, RN, APRN-CNP, ANEF, FAHA, FNAP, FAAN
Professor and Senior Associate Dean for Academic Affairs and Educational Innovation
Martha S. Pitzer Center for Women, Children and Youth
The Ohio State University College of Nursing
346 Newton Hall
1585 Neil Avenue
Columbus, Ohio 43210
Phone: 614-292-4179; Fax 614-292-4948
Email: Anderson.2765@osu.edu
https://nursing.osu.edu/faculty-and-staff/cindy-anderson

THE OHIO STATE UNIVERSITY

Re: Concurrence Request for GIS Wicked Science

LM

Liu, Morgan <liu.737@osu.edu>
To: Vankeerbergen, Bernadette; **Cc:** Moritz, Mark

Yesterday at 16:33

Dear Mark,

You have NESA's concurrence. Fantastic GIS. I've been thinking of Wicked Problems and structural problems as such myself.

Morgan

Morgan Y. Liu
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RE: Concurrence Request for GIS Wicked Science

RA

Ralph, Anne E. <ralph.52@osu.edu>

Yesterday at 16:21

To: Moritz, Mark

Mark,

Thanks for your email. The College of Law will grant concurrence. This looks like a great specialization, and I am pleased it will be open to our law students (I do see that it mentions being open to all professional students).

Would you please include me on any materials promoting this GIS so I can share with our students?

Very best,
Anne

THE OHIO STATE UNIVERSITY

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August 31, 2022

Re: Concurrence request for GIS Wicked Science

Dear Dr. Moritz:

This letter offers our response to your concurrence request for Graduate Interdisciplinary Specialization (GIS) Wicked Science sent on July 15, 2022.

First, we applaud the efforts and leadership you demonstrated in developing this important GIS. We agree that the GIS Wicked Science has a strong potential to enrich Ohio State's graduate curriculum by offering students an opportunity to learn to tackle complex problems from the wicked science perspective. To emphasize, the very definition of wicked problems also aligns with the characterization of public policy and societal problems shared by the Glenn College community. Therefore, the Glenn College appreciates the opportunity to be involved as a partner of the proposal and further development of the GIS.

We also appreciate your responses to our earlier comments on the curriculum design of the GIS. These revisions did improve the overall quality of the GIS proposal. We do have a few recommendations for you to consider moving forward.

First, we would like to mention that PA5620 Rapid Innovation for Public Impact (4 credits) course does have sufficient capacity to add additional students. The course is offered both in the autumn and spring, and our preference is to encourage GIS students to enroll in the class in the autumn, which typically has more seats.

Second, the Graduate School Handbook notes that: "Nine hours taken for the GIS must be completed outside of the student's home program in at least three courses." A potential problem is that the initial curriculum design of ANTHROP 5505, EEOB 5510, PUBAFRS 5620 and ANTHROP 5515 did not allow students from Anthropology or Public Affairs to complete this GIS, because nine hours must be from outside of the student's home program. The revised curriculum, allowing students the choices of DESIGN 5650 or DESIGN 6400 instead of PUBAFRS 5620 does remediate the problem for Glenn College students. However, cross-listing ANTRHROP 5505 and ANTRHROP 5510 might meet the letter of the handbook rules for Anthropology students, but it does not meet the spirit of the interdisciplinary rule that requires students to take courses outside their home department.

Third, and related to the above comment, we hope that GIS wicked science can add more electives from across campus for students to choose from. We believe electives would offer more flexibility to students, which is also in line with the common practice of GIS

design at Ohio State. Therefore, we suggest that you relist the recommended courses as electives of the GIS. We also updated the list of courses to reflect what we consider relevant for the GIS wicked science.

ACCAD 7893: Interdisciplinary Creative Research Studio (3 credits)
AEDECON 7320 Advanced Resource Economics (3 credits)
ANTHROP 8891.04 Social-Ecological Systems (3 credits)
ANTHROP 8891.05: Research Design and Ethnographic Methods (3 credits)
CIVILENG 5610.01/ FABE 5260.01 – Sustainable WaSH Infrastructure for Developing Rural Communities
DESIGN 5800.01 Industrial Design Seminar (3 credits)
DESIGN 6100 Methods and Tools for Conducting Design Research (3 credits)
HTHRHSC / PUBAFRS 7574: Mixed Methods Approaches for Policy-Related Research (3 credits)
ENGR 5797.24 Sustainable Community Development - Honduras (3 credits)
GEOG 5226 Spatial Simulation and Modeling in GIS
ISE 6300 Simulation for System Analytics and Decision-Making
MGT 7222 Simulation, Risk Analysis and Decision Making (3 credits)
PUBAFRS 7505: Wicked Policy Problems (3 credits)
PUBAFRS 5770: Risk and Decision Analysis (3 credits)
PUBAFRS 7572: Policy Simulation and Modeling (3 credits)

We hope that this not only shows our commitment to working with you but also our sincere hope that this GIS will be a success. We look forward to working with you in further developing this GIS.

Please do not hesitate to contact me if you have any questions.

Hongtao Yi, Ph.D.
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