

ABE 232/AFT 233
CONTEXT IN INTERNATIONAL INTERVENTIONS
An Introduction to Contextual Engineering
Syllabus

Tuesday/Thursday: 12:30 PM- 1:50 PM

Location: 1090 Lincoln Hall

Instructor:

Crispin Cholwe | ccholwe2@illinois.edu

Grader:

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Office Hours:

Crispin Wednesday: 10:00AM - 11:00AM

Namita Tuesday: 10:00AM - 11:00AM

Disclaimer: If the time indicated does not work for you, reach out via email to set up an appointment

Textbooks:

Contextual Engineering: Translating User Voice into Design, 2022, A. Witmer (available digitally)

Course Description:

This multi-disciplinary course will examine a new approach to infrastructure engineering for alternately developed societies that seek to counteract the disconnects and differing objectives among project stakeholders that result in a lack of infrastructure sustainability and resiliency. Using a case study from Western Africa, we will consider the impact of globalisation, the attitudes of industrialized societies, and the role of place-based knowledge in designing and implementing infrastructure interventions for rural societies. We will also examine why rural interventions are becoming crucial to alternately developed societies' security and advancement.

Course Objectives:

The following objectives are mapped onto the six-unit Bloom's Cognitive structure used throughout this outline.

Unit 1: Introduction to Contextual Engineering (Remember)

1. Introduce Contextual Engineering as a field.
 - a. Identify drivers for a new approach to international humanitarian engineering.
 - b. Develop a definition for Contextual Engineering and identify its functionality in a Globalised world.
2. Describe the current State of Global Practice
 - a. Describe how globalisation has standardized technical design practices across borders.
 - b. Recall major categories and documented examples of infrastructure interventions conducted by the Industrialized world.
3. Establish Context as a Formal Design Variable
 - a. Define 'context' and distinguish it from generic background information.
 - b. Recognise place-based knowledge as a core input that formal context-sensitive design must account for.

Unit 2: Perspectives, Motivations and Objectives (Understand)

4. Recognize Stakeholder Roles, Objectives and Motivations
 - a. Compare/contrast major stakeholders in an intervention effort
 - b. Identify differing objectives and the reasons why they conflict/agree.
 - c. Explore the interactions of diverse objectives and how they affect engineering design

Unit 3: Method and Tools-Appling Context (Apply)

- 5: Identify Perceptions and Attitudes of the Design Practitioner
 - a. Consider how a practitioner's experiences and beliefs affect design.
 - b. Learn the three productive stages of perception and the benefits/drawbacks of each.
- 6: Learn the Contextual Engineering Influences-Introduce the CE Framework
 - a. Identify the five key societal influences that determine acceptance, evolution, and sustainability of an infrastructure intervention.
 - b. Evaluate how influences can vary among communities, societies, nations, and ethnic identities.

Unit 4: Tensions in Practice-Standards, Appropriateness and Paradox (Analyze)

7. Understand the Role of standards in a Globalised Intervention
 - a. Define the history of engineering intervention in non-industrialized societies.

- b. Evaluate the conditions that determine intervention “effectiveness” by Western humanitarian engineers.
- c. Recognize the multiple roles standards play in globalized interventions, both positive and negative

8. Differentiate between Technology and Innovative Self-Sufficiency

- a. Define the difference between disruptive and evolutionary technology.
- b. Learn techniques for incorporating indigenous technology into infrastructure.
- c. Assess the balance between advancement and effectiveness.

Unit 5: Judgment - Evaluating Solutions and Practice (Evaluate)

9. Explore Rural versus Urban Interventions

- a. Evaluate the reasons why infrastructure interventions typically focus on population centres.
- b. Define urbanity and rusticity, and their relation to industrialised-world support.

Unit 6: Synthesis-Contextual Innovation and Practice (Create)

10. Summarise, Synthesise and Extend Course Materials

- a. Integrate stakeholder analysis, investigative findings, and standards judgment into one coherent, original design proposal.
- b. Extend course frameworks (the 3-4-5 Method, Predictive Tool) beyond the assigned case to the learner's own project context.

Grading:

Assignment	Points per Assignment	# of Assignments	Total Points	% of Final Grade
Classroom Participation	0.5	30	15	15%
Reflections	5	6	30	30%
Positionality Assignments	7.5	2	15	15%
Group Assignment One	10	1	10	10%
Group Assignment Two	10	1	10	10%
Group Assignment Three	10	1	10	10%
Team Partner Evaluations	10	1	10	10%

Numerical final grades will be converted to letter grades as follows:

NUMERICAL GRADE	LETTER GRADE
97.00—100.00	A+
93.00—96.99	A
90.00—92.99	A-
87.00—89.00	B+
83.00—86.99	B
80.00—82.99	B-
77.00—79.99	C+
73.00—76.99	C
70.00—72.99	C-
67.00—69.99	D+
63.00—66.99	D
60.00—62.99	D-
Below 60	F

Late Policy:

All assignments will lose 10% of the possible points per day after the assigned due date (including weekends), up to a maximum of 50%. Extenuating circumstances must be discussed directly with the instructors, preferably in advance of any disruptions that might delay assignment completion. Late assignments due to religious observance, medical, or family emergencies, as documented with the Student Assistance Centre, may be considered exceptions to this rule.

Extra credit points will be awarded for submissions to Canvas Discussions regarding the parables shared in the text. For each parable, students are encouraged to comment on the parable questions provided at the end of the chapter and interact with other students to explore topics. One extra-credit point will be awarded for each on-topic, meaningful post throughout the semester.

Participation:

Attendance and class participation are mandatory. Participation grades will be given through activities during class. Unexcused absences will detract from your grade, as they will noticeably lack pre-class preparation. Each student will have their two lowest participation grades dropped at the end of the course.

Course Prerequisites:

There are no specific prerequisites for this course, but students are expected to have developed logic and critical-thinking skills commonly cultivated in 100- and 200- level coursework in the social sciences, humanities, and/or technology studies. We will explore a broad array of disciplines, ranging from sociological globalisation theory to cultural identities of Sub-Saharan African peoples to agricultural economics. Your open-mindedness regarding their relationship with engineering design is necessary to achieve course objectives. Specific engineering expertise is not required for this course, though students will gain some insight into engineering design processes.

Course Structure:

The course runs for 14 weeks, meeting twice weekly (Tuesday and Thursday). It is organised into six Units, each mapped one-to-one onto Bloom's six cognitive levels.

Students will be required to complete two weekly reflection assignments to synthesize the concepts presented in course material. The objective of this course isn't to regurgitate information that's provided to you but to apply and interpret this information so that you can create a thorough and personal understanding of the challenges associated with international engineering work, particularly for non-industrialized societies that may not share the values, beliefs, identities, and customs of the interventionist.

In addition to the reflections, students will work together in project teams to explore their understanding of the material presented through three group projects. Each project will explore a phase of project completion – assessment, implementation, or monitoring – and present its findings using diverse communication methods. Grading of the group presentations will be completed using peer assessment.

To complete team assignments, you will need to meet regularly outside the classroom as a team. Please plan early for regular meetings at a time that accommodates all team members. Occasional class-time work sessions may be provided to allow teams to interact and find synergies by sharing insights and information. Inter-collaboration is strongly encouraged – there is no competition in this process, so work together!

Academic Integrity:

The University of Illinois at Urbana-Champaign *Student Code* should be considered as a part of this syllabus. Students should pay particular attention to Article 1, Part 4: Academic Integrity. Read the Code at the following URL: <http://studentcode.illinois.edu/>

Academic dishonesty may result in a failing grade. Every student is expected to review and abide by the Academic Integrity Policy: <http://studentcode.illinois.edu/>. Ignorance is not an excuse for any academic dishonesty. It is your responsibility to read this policy to avoid any misunderstanding. Do not hesitate to ask the instructor(s) if you are ever in doubt about what constitutes plagiarism, cheating, or any other breach of academic integrity.

Students with Disabilities:

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor as soon as possible. To ensure that disability-related concerns are properly addressed from the beginning, students with disabilities who require assistance to participate in this class should contact Disability Resources and Educational Services (DRES) and see the instructor as soon as possible. If you need accommodation for any sort of disability, please speak to me after class, or make an appointment to see me, or see me during my office hours. DRES provides students with academic accommodation, access, and support services. To contact DRES, you may visit 1207 S. Oak St., Champaign, call 333-4603 (V/TDD), or e-mail a message to disability@uiuc.edu. <http://www.disability.illinois.edu/>.

Emergency Response Recommendations:

Emergency response recommendations are available at the following website: <http://police.illinois.edu/emergency/>. Please review this website and the campus building floor plans website within the first 10 days of class.

Family Educational Rights and Privacy Act (FERPA):

Any student who has suppressed their directory information pursuant to the *Family Educational Rights and Privacy Act* (FERPA) should self-identify to the instructor to ensure protection of the privacy of their attendance on this course. See <http://registrar.illinois.edu/ferpa> for more information on FERPA.