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## Queered Science & Technology Center: Volume 2

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**Abstract:** This volume captures the original works by students enrolled in the “Humanities-Informed STEM” course at the University of California Los Angeles Samueli School of Engineering and Applied Sciences.

### INTRODUCTION

In popular imagination, science and technology are often viewed as fields of knowledge production critical to social progress and a cooperative future. This optimistic portrayal of technological advancement is also prominently in internal discourses amongst scientists, industry leaders, and STEM students. Yet a growing body of research, investigation, and first-person accounts highlight varying ways modern science, technology, and engineering industries contribute to the degradation of changing environments, and exploit and harm global low-income and marginalized populations.

To respond to an ever-growing demand for critical and tangible training of (future) STEM workforce in global and local inequities informed by a preceding Fiat Lux Seminar Series<sup>1-5</sup>, this first-ever taught course (Winter Quarter 2024) titled HI-STEM (Humanities-Informed Science, Technology, Engineering and Math / EC ENGR 188 - Special Courses in Electrical Engineering) offers participants with diverse epistemological approaches to STEM and the legitimacy of multiple forms of knowing.

### METHODS: Volume 2

During the 10-week, 4-unit course, students engage in self-reflective, analytical and group discussion, and rhetoric to achieve the following overarching learning outcomes:

1. Define implicit meanings of "epistemology"
2. Acknowledge different methods of generating knowledge beyond scientific processes
3. Discuss the benefits of legitimizing and incorporating multiple forms of knowledge production in scientific practice
4. Define and understand "settler colonialism," "racial capitalism," and "hetero-patriarchy," and identify their linkage to the modern Academic-Industrial Complex and its approaches.
5. Explain similarities/differences between feminist standpoint theory, Native feminist theory, Black feminist thought, critical queer theory, and disability theory, and be able to apply these frameworks in STEM contexts.

6. Identify the connections between industry, global/national/local/community interests, and the production of scientific knowledge, both as students and as consumers/future producers of technoscientific knowledge and byproducts.

As part of their learning assessment and grading criteria, participants write an original critical paper in which they (1) apply any of the course frameworks to a real-case study, (2) critically engage with the chosen topic by developing thoughtful questions and challenges to dominant STEM paradigms, theories, and/or praxis, and (3) integrate aspects of community engagement. Volume 2 is a collection of these works where participants (i) demonstrate critically analytical, (non-)quantitative, creative, and thorough scholarly writing, (ii) engage with STEM and STEM-adjacent topics using critical theories, and (iv) investigate the social, cultural, economic, political, etc. impact of their chosen topic(s).

The grading criteria are distributed across the following three points:

1. Demonstrate the ability to create original commentary/critique/support of technoscientific ideas, topics, or dynamics in a real-case study applying the critical course frameworks.
2. Develop thoughtful/thought-provoking questions, alternatives, or challenges to well-established STEM paradigms, theories, and/or praxis. Devise (a) strategy(ies) to integrate aspects of the case study into local/global community engagement initiatives. For example, writing reports or press releases for stakeholders, submitting an article to a broad STEM magazine, planning and implementing policy, etc.
3. You use adequate paper criteria and format, including structure, scientific writing, and citation style.

A full description of this new course curriculum can be found in the pre-print of a blueprint article authored by a collaboration of STEM, social sciences, and arts & humanities scholars and educators<sup>6</sup>.

## REFERENCES

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