New classes bring interdisciplinary approaches to science to the forefront

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A new series of classes at Tulane aims show what can be accomplished when big topics are studied from a range of disciplinary approaches. (Photo by Sabree Hill)

There is often a perceived divide between the liberal arts disciplines and science and engineering, but a new series of classes at Tulane University aims to bridge that chasm and show what can be accomplished when big topics are studied from a range of disciplinary approaches.

The new program is called STEM² Studies, which stands for science, technology, engineering, mathematics and medicine, and it consists of classes that are team-taught by pairs of professors from the School of Liberal Arts and the School of Science and Engineering, and in one case, the School of Medicine.

"The idea of bringing together stellar faculty from across the liberal arts and sciences has been in discussion for some time," said Brian Edwards, dean of the School of Liberal Arts, and it highlights Tulane's interdisciplinary strengths.

"This is exactly the kind of thing that makes Tulane a spectacular place to be," said Hridesh Rajan, the dean of the School of Science and Engineering, of the new classes. "The blending of STEMM disciplines allows students to not only gain technical expertise but also develop critical thinking and a broader perspective on real-world issues."

Edwards pointed out that understanding the biggest topics in the sciences, from the climate to reproductive health and from artificial intelligence to the brain itself, require an interdisciplinary approach. "To even begin to comprehend the impact of scientific discovery and the challenges and opportunities they open up, you have to look at the histories of how we got here, the social context within which they operate, and the ways in which cultural and intellectual history framed the way scientists and engineers approached the problems they were attempting to solve," Edwards said.

"The wicked challenges of the next two decades will require novel science and engineering solutions more than ever, and by encouraging students to engage with big, interdisciplinary questions from the start of their academic journey, we are fostering the transdisciplinary mindset needed to break through traditional boundaries," Rajan added. "This approach is essential in preparing our students to tackle the complex challenges of the future." He also noted the importance of cross-sector collaboration, such as that demonstrated by the Biden Cancer Moonshot announcement at Tulane, which emphasizes the need for groundbreaking science and innovation to combat cancer.

In the 2024-2025 academic year, four classes will be introduced as part of the STEM² Studies program: Reproductive Health with historian Karissa Haugeberg and obstetrics professor Amy Vaughn, Climate and Society with sociologist Laura McKinney and ecologist John Sabo, The Brain in Human Life with neuroscientist Beth

Wee and philosopher Daniel Burnston, and the History of Technology with historian Walter Isaacson and computer scientist Nick Mattei.

This fall semester, Wee, senior professor of practice in psychology and associate dean for undergraduate programs in the School of Science and Engineering, and Burnston, associate professor of philosophy and director of the Cognitive Studies Program in the School of Liberal Arts, are teaching "The Brain in Human Life," a class that combines neuroscience with philosophy and cognitive studies.

One advantage of these classes is that they give students at the first- and second-year level a chance to explore different subjects as they choose their majors. "College should be about exploring their interests," said Wee.

Oftentimes, there is an expectation that someone needs to be an expert in a field before they can start considering deeper, interdisciplinary questions, but Wee and Burnston think that is unnecessary.

"Why make students wait to start thinking about big questions?" Burnston asked.