

## TECHNOLOGY

# Cryptocurrencies Come to Campus

By NATHANIEL POPPER FEB. 8, 2018

BERKELEY, Calif. — While the price of Bitcoin has dropped since Christmas, the virtual currency boom has shown no signs of cooling off in the more august precincts of America's elite universities.

Several top schools have added or are rushing to add classes about Bitcoin and the record-keeping technology that it introduced, known as the blockchain.

Graduate-level classes this semester at Carnegie Mellon, Cornell, Duke, the Massachusetts Institute of Technology and the University of Maryland, among other places, illustrate the fascination with the technology across several academic fields, and the assumption that it will outlast the current speculative price bubble.

“There was some gentle ribbing from my colleagues when I began giving talks on Bitcoin,” said David Yermack, a business and law professor at New York University who offered one of the first for-credit courses on the topic back in 2014. “But within a few months, I was being invited to Basel to talk with central bankers, and the joking from my colleagues stopped after that.”

For a class this semester, Mr. Yermack originally booked a lecture hall that could fit 180 students, but he had to move the course to the largest lecture hall at N.Y.U. when enrollment kept going up. He now has 225 people signed up for the class.

A course about virtual currencies created by a Princeton computer science professor, Arvind Narayanan, has been the fifth-most-popular class on Coursera, an online learning site.

And last month at the University of California, Berkeley, students were lining the walls and sitting in the aisles for the first lecture of “Blockchain, Cryptoeconomics and the Future of Technology, Business and Law.”

“This is a very precious opportunity for you to be able to sit in this class,” Dawn Song, a computer science professor, told the students. “There are a bazillion other students who are waiting for your spot.”

Because developments in the field are moving so fast, the business school professor also teaching the class, Greg La Blanc, said the students would have to forgive the teachers if they got things wrong on occasion.

“We aren’t waiting until we perfect it,” he said. “Don’t compare it to the perfect blockchain course. Compare it to having no blockchain course at all.”

The 75 spots in the Berkeley class were divided evenly among the law school, the business school and the engineering department, and faculty from the three departments are teaching the course together. Ms. Song said she had around 100 students vying for the 25 places set aside for her department.

The interest is fueled by the rising price of virtual currencies over the last year. But they have created a host of issues that are worthy of study even apart from the price, professors in a variety of fields said.

For lawyers, virtual currency projects have challenged traditional legal categories and definitions of what constitutes a security or a commodity.

Regulators have been caught flat-footed as entrepreneurs have raised billions of dollars by selling virtual currencies without going through the traditional fundraising channels, taking advantage of the legal fuzziness surrounding them.

For economists and business school professors, Bitcoin and other digital tokens have raised questions about the nature of money. The first lecture in the Berkeley

class, for example, considered the development of Bitcoin against the history of money.

Several business school classes are also focusing on the decentralized methods of record keeping and decision making introduced by Bitcoin.

Bitcoin is given credit for creating the first blockchain, a ledger of transactions that is updated by a network of computers without relying on any central company or government.

Many big companies are now looking at how blockchains independent of Bitcoin might be used to do things like track music royalties or cargo containers with input from the many parties involved.

“The students in my class are from every possible discipline,” said Campbell Harvey, a professor at Duke’s business school, who is teaching a class with 231 students this semester. “They understand that this is going to disrupt many different areas of business, and they want to be the disrupters, not the disruptees.”

The computer scientists, meanwhile, are digging into the cryptography that virtual currencies use to secure their wallets and transaction data, as well as the design of the distributed computer networks that make blockchains possible.

Last week, Stanford University hosted a three-day conference on the architecture and security of blockchain software, part of a new cottage industry in academic conferences and journals that have sprung up.

“Let’s assume that tomorrow the price of Bitcoin drops down to \$2,” said Nicolas Christin, a computer science professor at Carnegie Mellon, who is teaching a course on “Cryptocurrencies, Blockchains and Applications” this semester. “I still think it’s very cool from a technical standpoint.”

Professors and students alike said that aside from the academic possibilities, familiarity with blockchain technology was becoming much more useful on the job market.

The job site Indeed.com has reported a spike in job listings that mention the blockchain, and there is now an entire site, Crypto Jobs List, dedicated to opportunities in the young industry.

Vinny Tuminelli, a business school student sitting at the back of the Berkeley class, said that during an internship at Anheuser-Busch last summer, the blockchain had come up in an “innovation team” he was on. When he met with his supervisor more recently, the topic came up again.

“My original understanding was that it was just thrown out there as a buzzword,” Mr. Tuminelli said. “But now it seems like it has some legs behind it, and people are putting real resources toward it.”

Students appear to have caught on to the opportunity faster than their professors. Berkeley students have created a campus club that offers multiple courses on blockchain technology, taught by the students themselves.

The director of M.I.T.’s Digital Currency Initiative, Neha Narula, said that when it didn’t schedule a course for this semester, she got constant requests from students. So she put one together and is now co-teaching it.

“Students are just fascinated with this area,” she said. “They want to learn about it desperately.”

Follow Nathaniel Popper on Twitter: @nathanielpopper.