aula d'enginyeria

Camins.cat
Col·legi d'Enginyers de Camins, Canals i Ports de Catalunya

Blockchain4Cities

Del 14 de desembre al 1 de març

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http://www.camins.cat/ca/aula-denginyeria/

COURSE DESCRIPTION

The course aims to introduce the main concepts of blockchain in a city environment using an applied approach. It consists of 10 sessions of two hour each, combining content lessons with practice. The first sessions will introduce the technological definition of blockchain specific to cities and will show some examples on methodologies and blockchain solutions that can already be found in cities and territories.

The course will continue by providing an understanding of the different urban codes currently shaping our cities these being Strategies, Policies, Planning, and Regulations but from a Cryptourbanomics perspective. Cryptourbanomics is a self-coined keyword to give name to an own method aimed at exploring the blockchain laws in the urban context. During these sessions there will be innovation-discovery interaction with students to start identifying use cases that students could take forward in the practical exercises as proofs-of-concept.

The understanding of urban codes from a blockchain perspective, what the Cryptourbanomics method is for, will be combined with examples and coding sessions in which students will learn how to use basic code templates to help them get the sense of how blockchain projects are developed. Therefore, students are asked to bring their own laptop, which should be a modern machine with at least 8GB RAM and 50 GB free space. Since all blockchain jargon is in English, the course will be delivered in English so that students can get the most out of it. The minimum English level to take the course is B2.

LEARNING OBJECTIVES

At course completion the student will:

-Understand the basics of a public blockchain in the urban context, including potential applications and their limitations.

-Be able to identify areas related to city management and city planning where blockchain can bring the benefits of decentralisation, self-verification, distribution and disruption.

-Be capable to design a real-situation project at proof of concept level, where blockchain is involved as a vehicle to solve that city challenge

COURSE WORKLOAD AND STRUCTURE

The course consists of 10 sessions of two-hour each. Students are expected to invest 2 extra hours per session to read recommended lectures and work on practical exercises.

COURSE CONTENTS

S1-Introduction to Blockchain4Cities: Discovering Cryptourbanomics

This will be an introductory lecture to the course to present the blockchain principles applied to cities and their governments. The need for blockchain technology in projects and in what cases will be discussed.

S2- Programming Frameworks

This lecture will serve as kick-off for the practical sessions and will therefore consist of a put-together of the crypto laws principles to design blockchain solutions for the urban domain in a framework-like structure.

S3- Disintermediated Strategies

It is said that the three characteristics of blockchain technology are Disruption, Distribution and Decentralisation. This section adds a fourth one that is essential to the urban domain: Disintermediation.

S4- Programming Transactions

Transactions are the most basic blockchain tool but not for that less powerful. This will be a practical session where students will see through examples and code how empowering transactions can be to change our cities.

S5- Disruptive Policies

From the lecture, students will learn why blockchain-based solutions generate disruptive environments and how disruption relates to urban policies.

S6- Programming Tokens

Urban policies delivered with blockchain are more disruptive than policies delivered through legacy systems. The right blockchain tool do deliver on urban policies are tokens and students will learn how to use them through examples and how they look in code.

S7-Distributed Planning

During the lecture, students will be given the key ideas to build a distributed urban system and will understand why distribution has physical connotations. Accordingly, planning delivered through blockchain will need from tools allowing for territorialisation.

S8- Programming Crowd sales

Urban planning is a distribution tool by default and the blockchain tool with distribution capabilities per se are crowd sales. Several crowd sales examples will be reviewed and the basic code will be put into practise to realise its territorialisation potential.

S9- Decentralised Regulations

Students will learn in which situations a decentralised model is better than a centralised one and the importance of setting common and democratic governance rules in distributed systems, which is exactly what blockchain can bring to the urban system.

S10- Programming Organisations

Organisations are the most powerful and autonomous blockchain tool and thus should be used in very special occasions. These decentralised autonomous organisations can devolve towards people. We will see examples of this along with different code for different organisation types.

Docent:



Lluïsa Marsal

Arquitecta, amb dos doctorats i dos màsters en les àrees d'Urbanisme i en Informàtica Aplicada. Ha estat professora i investigadora a la Universitat Politècnica de Catalunya i a la Universitat de Girona, on va crear el primer màster a nivell mundial en Smart Cities. Actualment fa investigació experimental en el camp de Blockchain4Cities, del qual n'és pionera. Ha combinat la seva carrera acadèmica amb treballs de consultoria especialitzada per governs i institucions, a destacar la col·laboració amb IBM USA durant el 2010-2011, l'encàrrec de l'agència d'innovació i intel·ligència urbana del Govern Britànic, Future Cities Catapult (London), durant el 2015-2017 i l'actual contracte amb l'ICAEN, Generalitat de Catalunya, com a agent d'innovació tecnològica, desenvolupant projectes blockchain aplicats a l'energia. Actualment és Presidenta de l'Associació Blockchain Catalunya.

Més informació:

- El curs està impartit en anglès, el nivell mínim requerit és el B2.
- Es requereix disposar d'ordinador portàtil modern amb un mínim de 8GB RAM i 50GB de disc lliure. Caldrà que portin l'ordinador a les classes.

Dades de contacte	Dates, horari i lloc	Preu
Col·legi d'Enginyers de Camins, Canals i Ports de Catalunya. C/ Vergós 16. Barcelona	Els divendres: 14 i 21 de desembre 11, 18 i 25 de gener 1, 8, 15 i 22 de febrer, 1 de març	Tarifa general: 585 €
Tel.: 93 204 34 12	15.30 a 17.30 hores (20 hores)	**Col·legiats:** 450 €
inscripcions@camins.cat	Col·legi d'Enginyers de Camins, Canals i Ports de Catalunya	*Col·legiats a l'atur o situació especial: 180 €
		*Precol·legiats: 270 €

* Places limitades. Consultar disponibilitat.

POLÍTICA DE CANCEL·LACIÓ: El Col·legi d'Enginyers de Camins, Canals i Ports es reserva el dret de cancel·lar un curs si no s'arriba al mínim de persones inscrites, en aquest cas es reintegrarà l'import total de la matrícula. No es retornarà l'import de la matrícula una vegada iniciat el curs sota cap concepte.

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