



---

**ITU Centres of Excellence Network for Asia-Pacific  
IoT Academy**

**Online Training Course on**

**“Developing IoT, Big Data and Blockchain Solutions  
for Smart Sustainable Cities”**

**26 April - 7 May 2021**

**TRAINING COURSE OUTLINE**

---

**COURSE DESCRIPTION**

---

Title	Developing IoT, Big Data and Blockchain Solutions for Smart Sustainable Cities
Objectives	This course aims to introduce participants to the concept and pillars of the Internet of Things taking into account the work of ITU in the areas of the smart sustainable city. Participants will be introduced to concepts, goals, frameworks, key aspects and KPIs of IoT and related technology solutions and services such as Big Data and Blockchain area and some use cases for the smart sustainable city (SSC).
Dates	26 April - 7 May 2021
Duration	12 Days
Registration deadline	23 April 2021
Training fees	USD 100
Course code	21OI26535ASP-E

**DESCRIPTION OF THE TRAINING COURSE**

---

Smart and sustainable cities to support sustainable development goals is a priority agenda for governments. This course aims to introduce participants to the concept and pillars of the Internet of Things taking into account the work of ITU in the areas of the smart sustainable city. Participants will be introduced to concepts, goals, and frameworks to key aspects and KPIs of IoT and related technology solutions and services such as Big Data and Blockchain area and some use cases for the smart sustainable city (SSC).

## LEARNING OUTCOMES

---

Upon completion of this training course, participants will be able to:

- identify different IoT concept, pillars, trend and the different IoT verticals related to smart cities;
- understand concepts, goals, and frameworks related to a smart sustainable city, including key aspects and KPIs required to develop smart sustainable cities;
- identify different IoT verticals such as smart grid, smart transportation, smart home, smart water, smart banking, and smart healthcare for smart sustainable city;
- identify big data solutions and strategies related to data such as open data and various data analytics services for SSC.
- identify Blockchain-based billing solutions and strategies related to cryptocurrencies and their concerns related to smart sustainable cities; and
- review the various case studies in the area of using emerging technologies in smart sustainable cities.

## TARGET POPULATION

---

Municipalities, organizations, industries, ICT experts, policymakers, regulators, service & solution providers and academia that are involved in the Internet of Things and smart city.

## ENTRY REQUIREMENTS

---

Those interested in the field of Internet of Things, smart city, Blockchain, etc. can participate in this training course.

## TUTORS/INSTRUCTORS

---

Experts from the IoT Academy and other invited international experts from industries.

## TRAINING COURSE CONTENTS and SCHEDULE

---

Week	Topic	Exercises and interactions
<b>Week 1</b>	<ul style="list-style-type: none"><li>- Internet of Things: concept, trend and market related to smart cities</li><li>- Smart sustainable city: concept and goals</li><li>- Smart sustainable city Infrastructure</li><li>- IoT based solutions for smart sustainable cities</li><li>- Developing Blockchain solutions for smart sustainable cities</li></ul>	<p><u>This week, each participant has to:</u></p> <ul style="list-style-type: none"><li>- Read the PDF slides and watch tutorial videos uploaded in the course page for week 1</li><li>- Post their questions or ideas to the discussion forum</li><li>- Attend a live zoom session scheduled for Saturday 1<sup>st</sup> May 2021 - 14:00hrs-15:00hrs (GMT+3.30)</li></ul>

	<ul style="list-style-type: none"> <li>- Developing Big Data solutions for smart sustainable cities</li> <li>- Security considerations for smart sustainable cities</li> </ul>	<ul style="list-style-type: none"> <li>- Complete a self-test quiz till Friday 7<sup>th</sup> May 2021 - 00:00hrs (GMT+3.30)</li> </ul> <p><b>Note:</b> Participants should pay attention to the course announcements that receive in their panel and email.</p>
<b>Week 2</b>	<ul style="list-style-type: none"> <li>- Smart sustainable city frameworks and KPIs</li> <li>- Integrated management for smart sustainable cities</li> <li>- Smart grid and smart sustainable cities</li> <li>- Open data in smart sustainable cities</li> <li>- Security challenges for intelligent sustainable building for SSC – Use Case 1</li> <li>- IoT and Big Data solutions for SSC – Use Case 2</li> <li>- Implementing IoT based solutions for SSC – Use Case 3</li> </ul>	<p><u>This week, each participant has to:</u></p> <ul style="list-style-type: none"> <li>- Read the PDF slides and watch tutorial videos uploaded in the course page for week 2</li> <li>- Post their questions or ideas to the discussion forum</li> <li>- Attend a live zoom session scheduled for Thursday 6<sup>th</sup> May 2021 - 14:00hrs-15:00hrs (GMT+3.30)</li> <li>- Upload an assignment in the course panel that considered by the tutors</li> <li>- Complete a self-test quiz till next Friday 14<sup>th</sup> May 2021 - 00:00hrs (GMT+3.30)</li> </ul> <p><b>Note:</b> Participants should pay attention to the course announcements that receive in their panel and email.</p>

## METHODOLOGY (Didactic approach)

**Course Materials:** The relevant course material will be made available on the website.

**Online Discussion Forums:** Participants are expected to participate actively in discussion forums on selected topics throughout the week.

**Chat Sessions:** Online chat sessions with the tutors will take place Saturday 1<sup>st</sup> May and Thursday 6<sup>th</sup> May from 14:00– 15:00 Hrs. Iran Time (GMT+3.30). All participants are expected to join the chat sessions as they will be graded.

**Quizzes:** Two mandatory online quiz will be held at the end of each week.

**Assignment:** There will be a mandatory assignment for the course.

## EVALUATION AND GRADING

Besides the tests and their assignment score, participants will be evaluated according to their substantive posts on the discussion forum, active participation in the online chat sessions and other course activities, reflecting both the quantity and quality of time spent on the course. The evaluation details and criteria for certificates is as follows.

Quiz #1:	30%
Quiz #2	30%
Individual Assignment:	20%

2 Chat Sessions (5% per session)	10%
2 Discussion Forum (5% per forum)	10%
<b>Total Evaluation:</b>	<b>100%</b>

**IMPORTANT:** A PASSING MARK OF 60% IS REQUIRED FOR OBTAINING A COMPLETION CERTIFICATE.

## TRAINING COURSE COORDINATION

---

<b>Course coordinator:</b> Name: Mr. Hamid Naghizadeh Email address: <a href="mailto:edu@iotaci.com">edu@iotaci.com</a>	<b>ITU coordinator:</b> Name: Mr. Sean Doral Email address: <a href="mailto:sean.doral@itu.int">sean.doral@itu.int</a>
---	--

## REGISTRATION AND PAYMENT

---

### ITU Academy portal account

Registration and payment should be made online at the ITU Academy portal. To be able to register for the course you **MUST** first create an account in the ITU Academy portal at the following address:

<https://academy.itu.int/index.php/user/register>

### Training course registration

When you have an existing account or created a new account, you can register for the course online at the following link: <https://academy.itu.int/training-courses/full-catalogue/developing-iot-big-data-and-blockchain-solutions-smart-sustainable-cities>

You can also register by finding your desired course in our training catalogue <https://academy.itu.int/training-courses/full-catalogue>

*Please note that online registration should be done before 23 April 2021*

### Payment

#### 1. On-line Payment

A training fee of USD 100 per participant is applied for this training. Payment should be made via the online system using the link mentioned above for training registration at <https://academy.itu.int/training-courses/full-catalogue/developing-iot-big-data-and-blockchain-solutions-smart-sustainable-cities>

#### 2. Payment by bank transfer

Where it is not possible to make payment via the online system, select the option for offline payment to generate an invoice using the same link as above. Download the invoice to make a bank transfer to the ITU bank account shown below. Then send the proof of payment/copy of bank transfer slip and the invoice copy to [Hcbmail@itu.int](mailto:Hcbmail@itu.int) and copy the course coordinator. **All bank transaction fees must be borne by the payer.**

**Failure to submit the above documents may result in the applicant not being registered for the training.**

### 3. Group payment

Should you wish to pay for more than one participant using bank transfer and need one invoice for all of them, create an account as **Institutional Contact**. **Institutional Contacts** are users that represent an organization. Any student can request to be an institutional contact or to belong to any existing organization.

To do this, head to your profile page by clicking on the “**My account**” button in the user menu. At the bottom of this page, you should see two buttons:

- a. If you want to **become an institutional contact**, click on the “**Apply to be an Institutional Contact**” button. This will redirect you to a small form that will ask for the organization name. After you fill the name of the organization you want to represent, click on “**continue**” and a request will be created. An ITU Academy manager will manually review this request and accept or deny it accordingly.
- b. If you want to **belong to an existing organization**, click on the “**Request to belong to an Institutional Contact**” button. This will redirect you to a small form that will ask you to select the organization you want to join from an organization list. After you select the correct organization, click on “**continue**”, a request will then be created. The Institutional Contact that represents that organization will manually accept or deny your request to join the organization.

#### ITU BANK ACCOUNT DETAILS:

Name and Address of Bank:	UBS Switzerland AG Case postale 2600 CH 1211 Geneva 2 Switzerland
Beneficiary:	Union Internationale des Télécommunications
Account number:	240-C8108252.2 (USD)
Swift:	UBSWCHZH80A
IBAN	CH54 0024 0240 C810 8252 2
Amount:	USD 100
Payment Reference:	CoE-ASP 21OI26535ASP-E -P.40593.1.08

### 4. Other method of payment

For local participants, who would like to pay in local currency, please contact Mr. Hamid Naghizadeh ([edu@iotaci.com](mailto:edu@iotaci.com)) the IoT Academy coordinator for further assistance.