ITU Centres of Excellence Network for Asia-Pacific
IoT Academy

Online Training Course on

"Building IoT Solutions for Smart Agriculture"

20 September – 1 October 2021

TRAINING COURSE OUTLINE (ONLINE)

COURSE DESCRIPTION

Title	**Building IoT Solutions for Smart Agriculture**
Objectives	This online training course aims to introduce participants to the Internet of Things and its abilities for enhancing and improving agricultural productivity and cost reduction. It will specifically focus on topics that address IoT usage for smart farming, smart water and energy management, and some use cases in this area.
Dates	20 September – 1 October 2021
Duration	12 Days
Registration deadline	19 September 2021
Training fees	USD 100
Course code	21OI26615ASP-E

DESCRIPTION OF THE TRAINING COURSE

The world population growth is increasing the demand for food production. Furthermore, the reduction of the workforce in rural areas and the increase in production costs are challenges for food production nowadays. Smart agriculture is a management concept focused on providing the agricultural industry with the infrastructure to leverage advanced technology especially the Internet of Things (IoT) – for tracking, monitoring, automating, and analyzing operations and realizing intelligent systems. This online training course aims to introduce participants to the Internet of Things and its abilities for enhancing and improving agricultural productivity and cost reduction. It will specifically focus on topics that address IoT usage for smart farming, smart water and energy management, and some use cases in this area.

LEARNING OUTCOMES

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

- o   identify the IoT concept and its capabilities and applications for the agriculture industry;
- o   understand concepts, goals, and frameworks related to smart agriculture, including key aspects required to develop smart agriculture;
- o   identify different IoT verticals such as smart transportation, smart water resource management, smart warehousing for smart agriculture; and
- o   review the various case studies in the area of using IoT solutions and services in the smart agriculture area.

TARGET POPULATION

The course is targeted at ministries, organizations, industries, ICT experts, policymakers, regulators, service & solution providers and academia that are involved in the area of agriculture and Internet of Things.

ENTRY REQUIREMENTS

Those interested in the field of Internet of Things, smart agriculture, smart water resource management, etc. can participate in this training course.

TUTORS/INSTRUCTORS

NAME OF TUTOR(S)/INSTRUCTOR(S)	CONTACT DETAILS
Dr. Farzad Ebrahimi *Chairman, & Founder of IoT Academy*	ebrahimi@iotacademy.ir
Ms. Maria Waleska Guerrero Lemus *Sustainability Consultant*	waleska.guerrerolemus@gmail.com
Mr. Jamal Sophieh *University Lecturer and Instructor inn Technology , Business, Creativity , Entrepreneurship, at Shahid Beheshti University*	Jsophieh@yahoo.com
Mr. Roozbeh Babazadeh *IoT Consultant, Tehran University of Medical Sciences*	r.babazadeh@gmail.com
Mr. Amir Vahabpour *Former Senior Researcher at Sharif Energy Research Institute (SERI)*	a.vhbpr@gmail.com

TRAINING COURSE CONTENTS

- **Week 1-1** Internet of Things concept and Pillars
- **Week 1-2** IoT trend and verticals related to smart agriculture
- **Week 1-3** Application of drones in the smart agriculture for the precision farming and data collection
- **Week 1-4** Smart agriculture concept and goals
- **Week 1-5** IoT based solutions for livestock monitoring and use cases
- **Week 2-1** IoT Solutions for Smart Farming: Monitoring and Preventing the Crop Problems
- **Week 2-2** IoT Solutions for energy and water resource management
- **Week 2-3** Powering and solar energy for smart agriculture
- **Week 2-4** Precision farming
- **Week 2-5** IoT solutions and use cases for smart agriculture

TRAINING COURSE SCHEDULE

Week	Topic	Exercises and interactions
Week 1	- Internet of Things concept and Pillars - IoT trend and verticals related to smart agriculture - Application of drones in the smart agriculture for the precision farming and data collection - Smart agriculture concept and goals - IoT based solutions for livestock monitoring and use cases	<u>This week, each participant has to:</u> - Read of the PDF slides uploaded in the course page for week 1 - Post their questions or ideas to the discussion forum - Attend a live zoom session scheduled for Saturday - 14:00hrs-15:00hrs (GMT+3.30) - Complete a self-test quiz till Friday - 00:00hrs (GMT+3.30) **Note:** Participants should pay attention to the course announcements they receive in their panel and email.
Week 2	- IoT Solutions for Smart Farming: Monitoring and Preventing the Crop Problems - IoT Solutions for energy and water resource management - Powering and solar energy for smart agriculture - Precision farming - IoT solutions and use cases for smart agriculture	<u>This week, each participant has to:</u> - Read of the PDF slides uploaded in the course page for week 2 - Post their questions or ideas to the discussion forum - Attend a live zoom session scheduled for Thursday - 14:00hrs-15:00hrs (GMT+3.30) - Upload an assignment in the course panel that considered by the tutors

		- Complete a self-test quiz till next Friday - 00:00hrs (GMT+3.30) **Note:** Participants should pay attention to the course announcements they receive in their panel and email.

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 on Saturday 25 September 2021 and Thursday 30 September 2021 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%
Total Evaluation:	**100%**

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

TRAINING COURSE COORDINATION

Course coordinator:	**ITU coordinator:**
Name: Mr. Hamid Naghizadeh Email address: edu@iotaci.com	Name: Mr. Sean Doral Email address: sean.doral@itu.int

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/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/building-iot-solutions-smart-agriculture

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

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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/building-iot-solutions-smart-agriculture

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 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 21OI26615ASP-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) the IoT Academy coordinator for further assistance.