



**ITU Centres of Excellence Network for Arab Region**

**Centre International des Technologies de l'Environnement de Tunis  
(CITET)**

**Online Training Course on**

**"Application of GIS in Environmental Management  
and Resources Protection - Level 1"  
12 to 16 July 2021**

**TRAINING COURSE OUTLINE**

**COURSE DESCRIPTION**

|                       |  |
|-----------------------|--|
| Title                 | Application of GIS in environmental management and resources protection - Level 1  |
| Objectives            | <ol style="list-style-type: none"><li>1. Understand fundamental concepts and practices of Geographic Information Systems (GIS)</li><li>2. Apply basic GIS functionalities.</li><li>3. Demonstrate organizational skills in file and database management.</li><li>4. Apply GIS analysis to address geospatial problems and/or research.</li><li>5. Demonstrate proficiency in the use of GIS tools to create maps.</li><li>6. Demonstrate confidence in undertaking new analysis using GIS</li><li>7. Give examples of interdisciplinary applications of Geospatial Information in relation with Environment.</li></ol> |
| Dates                 | 12 to 16 July 2021, 14:00-17:00 Tunis Time   |
| Duration              | 05 Days (3 hours / day)  |
| Registration deadline | 7 July 2021  |
| Training fees         | 120 USD or 360 TND   |
| Course code           | 21OI26608ARB-A   |

## DESCRIPTION OF THE TRAINING COURSE

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A Geographic Information System (GIS) enables organizational integration of data from different sources (geographic and non-geographic data). In other words, it is a system that collects, stores, analyzes and visualizes data. GIS provides us with decision-making support tools.

The Geographic Information System can be used to map areas suitable for the establishment of wind farms, to identify environments to be protected thanks to the various available information analyzes, to estimate the surface area of home ranges and even to carry out studies of the environment.

## LEARNING OUTCOMES

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The use of GIS and Remote Sensing to organize and present spatial data in a way that allows effective environmental management planning. Decision makers and planners can use GIS to organize and present spatial data in a more effective way that frame with the ITU's vision and mission in the area of environmental sustainability and climate change.

## TARGET POPULATION

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This training targets engineers, technicians, projects managers in the Ministries of Information Technology and Communications (ICT), Ministries of Environments, ICT regulators, private sector working in the environment issues. Other institutions and individuals who are interested in having an overview of Environmental Management System (EMS) are also welcome to participate in this training program.

## ENTRY REQUIREMENTS

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You should have experience in project managements, have knowledge in informatics systems, data bases and should can manipulating mapping software, have competency in quality or safety or environment management.

## TUTORS/INSTRUCTORS

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| NAME OF TUTOR(S)/INSTRUCTOR(S) | CONTACT DETAILS    |
|--------------------------------|--------------------|
|                                | Phone: +<br>Email: |

## TRAINING COURSE CONTENTS

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This course will be divided into 4 main parts, namely:

- CHAP 1 : Introduction to GIS and remote sensing in Sensing in environmental management;
- CHAP 2 : Geospatial technologies and techniques for environmental mapping;
- CHAP 3 : GIS as a tool for spatial Analysis;
- CHAP 4 : Use of GIS and Remote sensing to identify and analyze potential impacts.

## TRAINING COURSE SCHEDULE (Tunis Time)

| Week / Session                                    | Topic  | Exercises and interactions  |
|---|--|---|
| <b>12 July 2021</b><br><b>From 14h00 to 17h00</b> | <ul style="list-style-type: none"> <li>- Brief welcome and overview of the session</li> <li>- Team presentation</li> <li>- CHAP 1 : Introduction to GIS and remote sensing in Sensing in environmental management</li> <li>- Knowledge recap: environmental sustainability and GIS.</li> </ul>             | <ul style="list-style-type: none"> <li>- Course materials and practical examples and role plays</li> <li>- Introduction to GIS software (Open Source, Desktop and Web based)</li> </ul>   |
| <b>13 July 2021</b><br><b>From 14h00 to 17h00</b> | <ul style="list-style-type: none"> <li>- CHAP 2 : Geospatial technologies and techniques for environmental mapping</li> <li>- Components of GIS</li> <li>- GIS Data sources for environmental management,</li> <li>- Projection and coordinate system</li> </ul>   | <ul style="list-style-type: none"> <li>- Working with GIS data</li> <li>- Rasterization and vectorization</li> <li>- GIS data collection using mobile devices</li> <li>- GPS data collection for environmental management</li> </ul>          |
| <b>14 July 2021</b><br><b>From 14h00 to 17h00</b> | <ul style="list-style-type: none"> <li>- Chap3: GIS as a tool for spatial Analysis</li> <li>- Basic GIS functionalities requesting data</li> </ul>   | <ul style="list-style-type: none"> <li>- Site location</li> <li>- Land use/Land Suitability analysis</li> <li>- Distance to areas of population</li> <li>- Local area demographics/ Proximity to transport and road infrastructure</li> </ul> |
| <b>15 July 2021</b><br><b>From 14h00 to 17h00</b> | <ul style="list-style-type: none"> <li>- Chap3: GIS as a tool for spatial Analysis</li> <li>- Environmentally sensitive areas</li> <li>- Chap 4: Use of GIS and Remote sensing to identify and analyze potential impacts</li> <li>- Spatial Multi-Criteria Decision Analysis using GIS Software</li> </ul> | <ul style="list-style-type: none"> <li>- Methodological steps in MCA and Spatial Analysis</li> <li>- Introduction to monitoring and change detection</li> </ul>   |
| <b>16 July 2021</b><br><b>From 14h00 to 17h00</b> | <ul style="list-style-type: none"> <li>- Chap 4: Use of GIS and Remote sensing to identify and analyze potential impacts</li> </ul>  | <ul style="list-style-type: none"> <li>- Exercises and case studies will be presented about Open Source web based resources</li> </ul>  |

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|  | - Geographic Data for Environmental Modelling and Assessment | such for decision support in environmental management |
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## METHODOLOGY

Course materials: will be available on the website.

Exercises and case studies will be presented every day during the training.

Academic part is 70% and Practical part is 30%.

## EVALUATION AND GRADING

There will be a pre-assessment test to evaluate the prior knowledge of the participants (30 Minutes test).

There will daily short quizzes (10 minutes – 10 questions) at the end of each day to measure the progress of knowledge acquisition.

There will be a final test (MCQ of 50 different questions – 1 hour).

**IMPORTANT:** a passing mark of 60% is required for obtaining a completion certificate.

## TRAINING COURSE COORDINATION

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|---|---|
| <p><b>Course coordinator:</b><br/> <b>Mr. Jawhar Abdelkrim</b><br/> CITET<br/> Tel: +216 71 206 766<br/> Mobile: +216 51 489 942<br/> Fax: +216 71 206 642<br/> Email: <a href="mailto:financement@citnet.nat.tn">financement@citnet.nat.tn</a><br/> <a href="mailto:formation@citnet.nat.tn">formation@citnet.nat.tn</a></p> | <p><b>ITU coordinator:</b><br/> <b>Eng. Mustafa Al Mahdi</b><br/> Programme Officer<br/> Arab Regional Office-ITU<br/> Tel: +202 3537 1777<br/> Mobile: +20114 117 75 73<br/> Fax : +202 3537 1888<br/> Email: <a href="mailto:mustafa-ahmed.al-mahdi@itu.int">mustafa-ahmed.al-mahdi@itu.int</a></p> |
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## 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/applications-gis-environment-management-and-resources-protection-level-1>

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

## Payment

### 1. On-line payment

A training fee of USD 120 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/applications-gis-environment-management-and-resources-protection-level-1>

### 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:**

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|---------------------------|--|
| Name and Address of Bank: | UBS Switzerland AG<br>Case postale 2600<br>CH 1211 Geneva 2<br>Switzerland |
| Beneficiary:              | Union International des Telecommunications                                 |
| Account number:           | 240-C8108252.2 (USD)   |
| Swift:                    | UBSWCHZH80A  |
| IBAN                      | CH54 0024 0240 C810 8252 2   |
| Amount:                   | 120 USD  |
| Payment Reference:        | CoE-ARB 26608 – WBS No. P.40592.1.08                                       |

**4. Other method of payment**

If due to national regulations, there are restrictions that do not allow for payment to be made using options 1 & 2 above, you can pay by bank transfer, to the CITET bank account shown below.

Then send the proof of payment / copy of bank transfer slip to the course coordinator [financement@citet.nat.tn](mailto:financement@citet.nat.tn) and copy [formation@citet.nat.tn](mailto:formation@citet.nat.tn).

**CITET BANK ACCOUNT DETAILS:**

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|---------------------------|---|
| Name and Address of Bank: | ATB Berge du Lac<br>Immeuble Regency<br>1081 Tunis<br>Tunisie |
| Beneficiary:              | Tunis International Centre for Environmental<br>Technologies  |
| Account number:           | 01 902 047 1106000286 96 (TND)                                |
| Amount:                   | TND 360   |
| Payment Reference:        | "Payement Formation SIG1"                                     |