

# IIT Kharagpur AI4ICPS Certificate Programme

Hands-on approach to AI for real-world applications (HAAI)

Orientation Session

July 13, 2024



## Topics to be Covered

- ✓ Course Schedule
- ✓ Live Webinar and Course components
- ✓ Accessing Webinar Recordings
- ✓ Quizzes and Modular Assignments
- ✓ Course Community as a Mode of Communication
- ✓ National Proficiency Test Details



## Using TCS Infra and Reimbursement Eligibility

- Associates are advised to use Personal Laptop for Hands-on due to Security policies
- Webex though can be attended from TCS Laptop
- Scoring and Certification Requirement (CoC only) to be Eligible for Reimbursement – To be announced

For any external certification reimbursement process/policy, please connect with your unit/BG Talent Development team (TD Lead) for the steps and approvals.

<https://knowmax.ultimatix.net/sites/learning-corpfn/TalentDevelopment/Lists/CDM/AllItems.aspx>Ultimatix - Digitally Connected!

# Certificate of Completion

Congratulations

**Dipak Sonawane**

for successfully completing the course on

**Hands-on approach to AI for real-world applications (for TCS)**

Organized by IIT Kharagpur AI4ICPS | Hub Foundation and TCS iON

October 19<sup>th</sup>, 2024

*Mehul Mehta*

**Mehul Mehta**

Global Delivery Head – TCS iON,  
Tata Consultancy Services

*Pabitra Mitra*

**Pabitra Mitra**

Joint Project Director,  
IIT Kharagpur, AI4ICPS | Hub Foundation



AI4ICPS



IIT Kharagpur

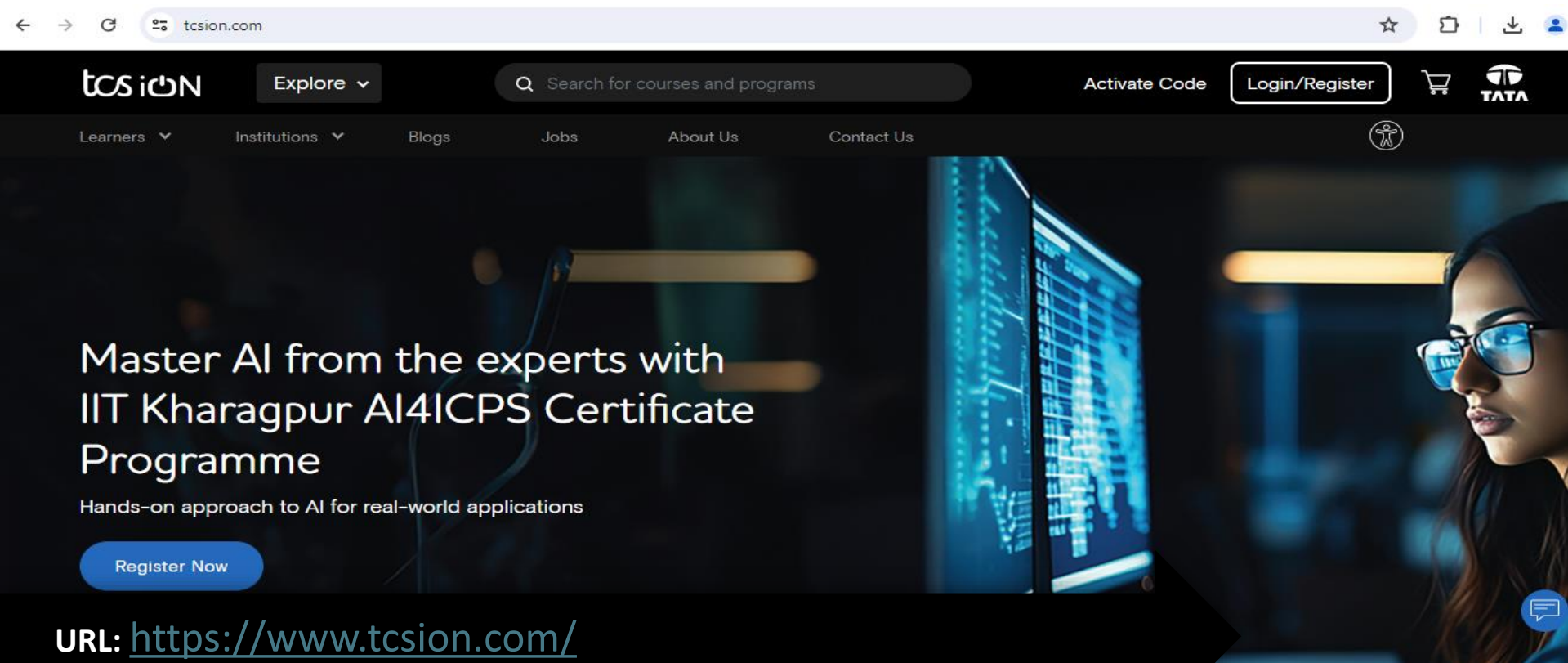
# Course Schedule

Week	Session Title	Session Date	Start Time (IST)	End Time (IST)	QA Time (IST)
1	Introduction to AI	13-July-24	09:00	10:00	10:00 - 10:30
1	Mathematical Foundations for AI and ML - I	13-July-24	10:30	12:30	12:30 - 13:00
2	Mathematical Foundations for AI and ML - II	20-July-24	09:00	11:00	11:00 - 11:30
2	Hands-on Python: Notebooks (Colab, Jupyter)	20-July-24	11:30	12:30	12:30 - 13:00
3	Hands-on Python: Numpy, Pandas	27-July-24	09:00	11:00	11:00 - 11:30
3	Linear Models for Regression and Classification	27-July-24	11:30	13:00	13:00 - 13:30
4	Supervised Machine Learning (Classification, Bayes classifier, KNN, SVM)	03-Aug-24	09:00	11:00	11:00 - 11:30
4	Supervised Machine Learning (Lab) (Bayes classifier, KNN, SVM) (Scikit Learn)	03-Aug-24	11:30	13:00	13:00 - 13:30
5	Supervised Machine Learning (Theory) (Decision Tree, Random Forest)	10-Aug-24	09:00	10:00	10:00 - 10:30
5	Introduction to NLP	10-Aug-24	10:30	11:30	11:30 - 12:00
5	Classification (Decision Tree, Random Forest) & Regression (Linear and Logistic Regression) (Lab) (Scikit Learn)	10-Aug-24	12:00	13:00	13:00 - 13:30
6	Unsupervised Machine Learning (Theory) (Clustering, K-Means, Hierarchical, PCA)	17-Aug-24	09:00	10:30	10:30 - 11:00
6	Unsupervised Machine Learning Lab (Scikit Learn)	17-Aug-24	11:00	12:30	12:30 - 13:00
7	Reinforcement Learning	24-Aug-24	09:00	10:30	10:30 - 11:00
7	Foundations of Neural Networks and Deep Learning (Theory) (ANN, CNN, RNN)	24-Aug-24	11:00	12:30	12:30 - 13:00

# Course Schedule (contd.)

8	DL Models - Inference with pre-trained models (Pytorch), Training Models from scratch	31-Aug-24	9:00	10:30	10:30 - 11:00
8	DL Models - Transfer Learning from Pre-trained models	31-Aug-24	11:00	12:30	12:30 - 13:00
9	DL Applications in Computer Vision	07-Sep-24	09:00	11:00	11:00 - 11:30
9	DL Applications in Computer Vision	07-Sep-24	11:30	12:30	12:30 - 13:00
10	Advanced DL (Transformers, BERT) (Theory)	14-Sep-24	09:00	10:30	10:30 - 11:00
10	Advanced DL Lab (Transformers)	14-Sep-24	11:00	12:30	12:30 - 13:00
11	Prompting with open-source LLMs (Llama2 / Mistral)	21-Sep-24	09:00	10:30	10:30- 11:00
11	Deep-temporal models (Transformer Hawkes)	21-Sep-24	11:00	12:30	12:30 - 13:00
12	Foundations of Generative AI	28-Sep-24	09:00	10:30	10:30 - 11:00
12	Application Lab: (Computer Vision: GANs, VAEs) (Large Language Models: BERT, GPT)	28-Sep-24	11:00	12:30	12:30 - 13:00
13	Industry Use Case 1: Computer Vision Applications	05-OCT-24	09:00	10:30	10:30 - 11:00
13	Industry Use Case 2: ChatGPT and LLM with cloud	05-OCT-24	11:00	12:30	12:30 - 13:00
14	Career Preparation(Digitalization Skills: Social Media Strategy for Profile Visibility, Art of Interviewing), (AI Opportunities)	19-OCT-24	09:00	11:00	11:00 - 11:30
14	Feedback and Doubt Clearing Session	19-OCT-24	11:30	13:00	

# Link to Access Product



The screenshot shows the TCS iON website. The browser address bar displays 'tcsion.com'. The navigation bar includes the TCS iON logo, an 'Explore' dropdown menu, a search bar with the text 'Search for courses and programs', and links for 'Activate Code', 'Login/Register', and a shopping cart icon. Below the navigation bar, there are links for 'Learners', 'Institutions', 'Blogs', 'Jobs', 'About Us', and 'Contact Us'. The main banner features a woman wearing glasses looking at a computer screen displaying code. The text on the banner reads: 'Master AI from the experts with IIT Kharagpur AI4ICPS Certificate Programme' and 'Hands-on approach to AI for real-world applications'. A blue button labeled 'Register Now' is positioned below the text. At the bottom of the banner, the URL 'URL: <https://www.tcsion.com/>' is displayed. The TCS iON logo and TATA logo are visible in the footer.

← → ↺ 📄 tcsion.com ☆ 📁 ⬇️ 👤

**tcs iON** Explore ▾ 🔍 Search for courses and programs Activate Code Login/Register 🛒 **TATA**

Learners ▾ Institutions ▾ Blogs Jobs About Us Contact Us 🧑

## Master AI from the experts with IIT Kharagpur AI4ICPS Certificate Programme


Hands-on approach to AI for real-world applications

Register Now

URL: <https://www.tcsion.com/>

**tcs iON** | **TATA**

# Course Components





Digital Lecture: II...

0 Hands-on  
0 Pending

0 Assessments  
0 Pending

0 Assignments  
-1 Pending

Regular | Start 24 Aug 2023 - 31 Jul 2024



LAUNCH

IIT Kharagpur AI4ICPS Certificate Programme

Discussion Room : IIT Kharagpur AI4ICPS Certificate Programme Hands-on Approach to AI for Real-world Applications (HAAI): 7-11-2023  
COMMUNITIES

Visit

IIT Kharagpur AI4ICPS Certificate Programme  
EFORMS

Continue



# Community





## Discussion Room : IIT Kharagpur AI4...

Role: Community Administrator / Community Mod...



## Community - Connect with SME

Community will be used for the following:

1.

Share Live Webinar  
Links 1 day prior to  
session

2.

Notify on Assignment  
availability

3.

Reminder on Quiz (1  
day prior)

4.

Notify on Quiz  
availability

5.

Notify availability on  
Model Assignment

6.

Upload Question and  
Answers to queries  
raised during Webinar

## Live Webinar (contd.)



**tcs iON** Digital Learning  
Empowering Learning Outcomes

**COLLABORATE with EXPERTS and PEERS**  
to build a holistic subject comprehension

**Discussion Room : IIT Kharagpur AI4ICPS Certificate Programme Hands-on Approach to AI for Real-world Applications (HAAI): Cohort 2**

[Manage Community](#)

This community comprises unstructured content where the learner can collaborate with their peers and mentors, and will have the capability to also post content on the community.

Joined on: 15 May 2024, 11:34 AM, Role: Community Administrator

# Webex Link in Discussion Room



IHC Digital Lecture Session 09 and 13\_Practical Approach to Data Mining and Analytics-- Monday June 26th @ 230 PM

Dear Learner,

Please find the WebEx invite for the session on Monday at 2.30 PM.

Event Link

<https://tcs2.webex.com>

Event Number **6515 652 1010**

Password **123456**

Date and Time Monday, June 26, 2023 2:30 PM

[Read less](#)



26 Jun 2023 02:30PM - 26 Jun 2023 04:00PM

WebEX

# Live Webinar on Webex - Desktop

## STEP 1

Join at least **10 mins** prior to the scheduled time.

## STEP 2

Go to the following **event address** for attendees:

## STEP 3

Enter your **name, email, institute /university, and click Join** (Ignore the Event Password field in the webinar joining page. Password is already there.)

## STEP 4

Ensure that your computer has a speaker attached /inbuilt or that you have **headphones/earphones**.

## STEP 5

Upon entry, kindly click "**Yes**" when prompted for Integrated Voice Conference. (In order to hear the conference, you have to enable this. If missed, click on 'Connect to Audio' or Go to Communications Menu and Start Integrated Voice Conference.)

# How to Access to Live Session on Webex - Mobile

## Steps to join using mobile app

### STEP 1

Download the Webex app by Cisco

### STEP 2

Open the app, enter the meeting number

### STEP 3

Enter Password

### STEP 4

Tap on the "Call" button and turn on audio (You may then turn on the speaker using the menu)

# Accessing Webinar Recording– Digital Lecture Node



☰

Digital Lecture : IIT Kharagpur AI4ICPS Certificate Programm...

CONTENT

NOTES 0

🕒 Table of Contents 🔍

> Week 1 🔒

> Week 2 🔒

> Week 3 🔒

> Week 4 🔒

> Week 5 🔒

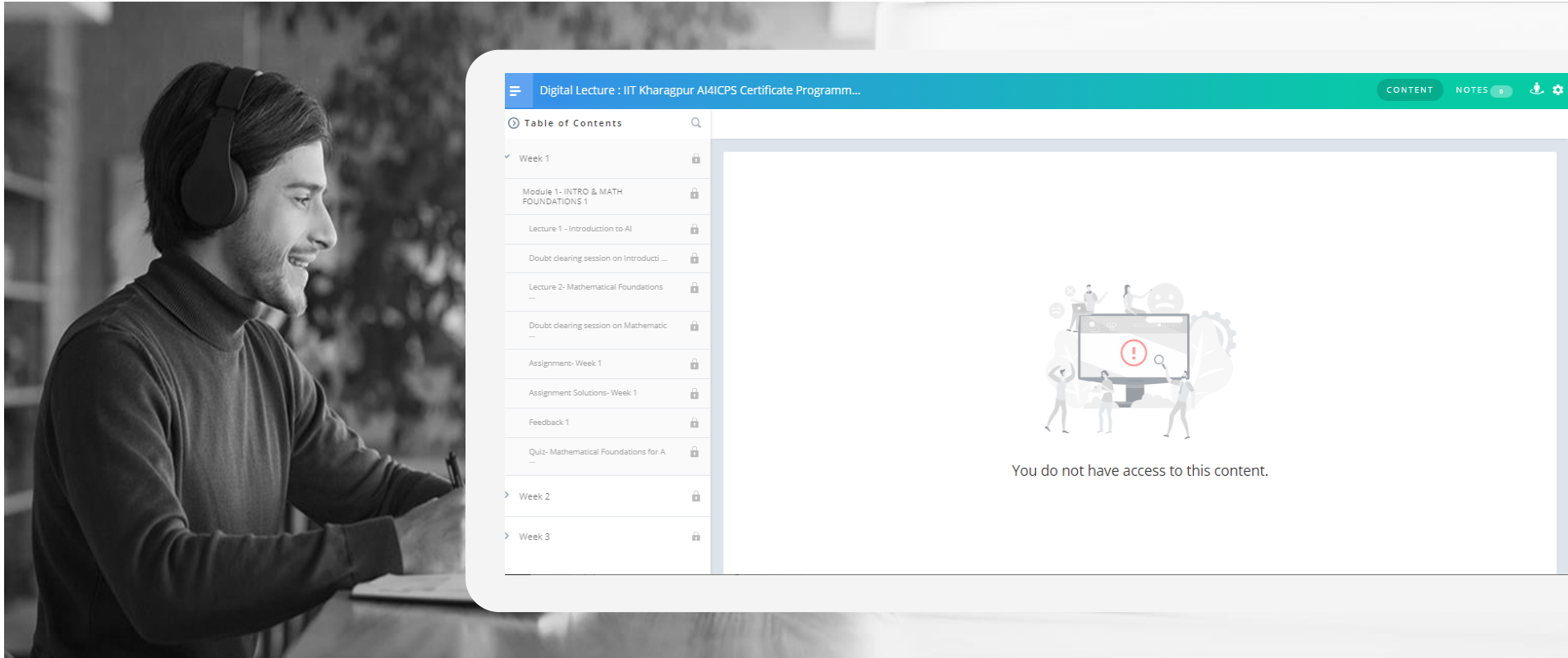
> Week 6 🔒

> Week 7 🔒

> Week 8 🔒

You do not have access to this content.

# Accessing Webinar Recording– Digital Lecture Node



The image shows a man with a beard and long hair, wearing large black headphones, looking at a tablet. The tablet screen displays a digital lecture interface for the 'Digital Lecture : IIT Kharagpur AI4ICPS Certificate Programm...'. The interface has a teal header bar with 'CONTENT' and 'NOTES' tabs. Below the header is a 'Table of Contents' sidebar with a list of items, each with a lock icon. The main content area shows a large illustration of a computer monitor with a red exclamation mark and a magnifying glass, surrounded by people icons. Below the illustration, the text reads: 'You do not have access to this content.'

**Digital Lecture : IIT Kharagpur AI4ICPS Certificate Programm...**

**Table of Contents**

- ✓ Week 1
- Module 1- INTRO & MATH FOUNDATIONS 1
- Lecture 1 - Introduction to AI
- Doubt clearing session on Introducti ...
- Lecture 2- Mathematical Foundations ...
- Doubt clearing session on Mathematic ...
- Assignment- Week 1
- Assignment Solutions- Week 1
- Feedback 1
- Quiz- Mathematical Foundations for A ...
- > Week 2
- > Week 3

You do not have access to this content.



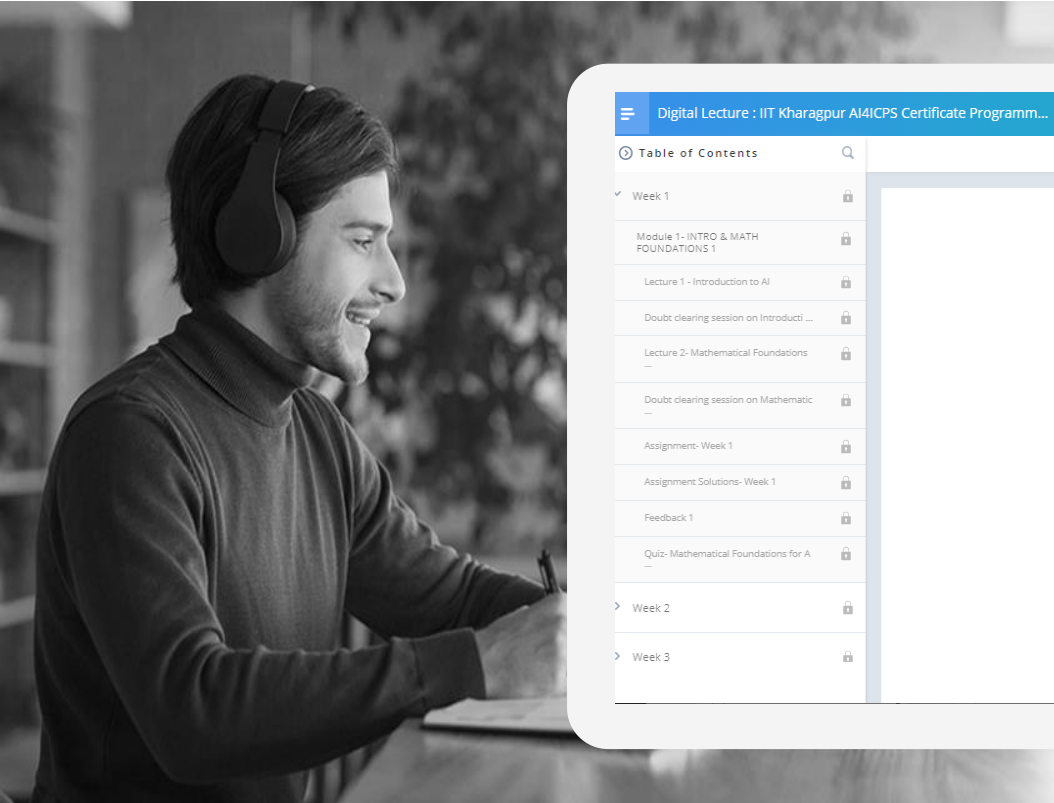
## Modular Assignments

**Modular Assignment** will be uploaded on the portal post completion of every digital Lecture session.

**Solution to the Modular Assignment** will be uploaded by the subsequent Saturday 9 AM.



# Accessing Assignment– Digital Lecture Node



Digital Lecture : IIT Kharagpur AI4ICPS Certificate Programm...

CONTENTNOTES9

Table of Contents

Week 1

Module 1- INTRO & MATH FOUNDATIONS 1

Lecture 1 - Introduction to AI

Doubt clearing session on Introducti ...

Lecture 2- Mathematical Foundations ...

Doubt clearing session on Mathematic ...

Assignment- Week 1

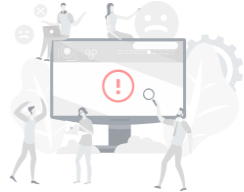
Assignment Solutions- Week 1

Feedback 1

Quiz- Mathematical Foundations for A ...

Week 2

Week 3



You do not have access to this content.

# How to Upload Assignments

The screenshot displays the TCS iON LMS interface for a course titled "Digital Lecture: IIT Kharagpur AI4ICPS Certificate Programm...". The top navigation bar includes "CONTENT" and "NOTES" tabs. The left sidebar shows a "Table of Content" with a search icon and a list of items: "Test Assignment 1" (selected), "Test Assignment 2", "References", "Week 1", "Week 2", "Week 3", "Week 4", "Week 5", and "Week 6". The main content area is titled "Test Assignment 1" and contains the following information:

**Test Assignment 1**

*Note: Assignment analysis will be at the end of the Assignment.  
To examine the evaluator's comments, please open the reports by clicking the "attempt taken" tab.*

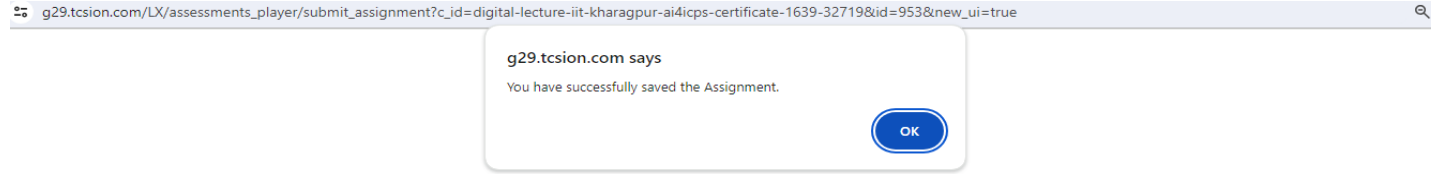
[LAUNCH ASSIGNMENT >](#)

<b>Passing Marks</b> Not Available	<b>Start Date/Time</b> 21 Jun 2024   11:24 AM	<b>End Date/Time</b> 30 Jun 2024   12:00 AM	<b>Mode Of Submission</b> Online
<b>Type</b> Individual Assignment	<b>Attempts Taken</b> 0 / 1		

## How to Upload Assignments

[illegible]

# How to Upload Assignments



# How to Upload Assignments


Saved as Draft

Online Attempt 1

### FACULTY FEEDBACK


**Question**  
Test Assignment 1

**Answer**



*At the time of submission you have not given the text answer.*

**File Uploaded**

 Model\_Answers\_to\_t...

Total Marks	Passing Marks	Marks Obtained
NA	NA	NA

Saved as Draft

CLOSE

# How to Upload Assignments

Test Assignment 1

Saved as Draft

Mode Online

Taking Attempt 1  
24 Jun 2024 ▾

QUESTION

Test Assignment 1

Assignments\_Math.pdf

Total MarksNAPassing MarksNA

File Uploaded

1719226359\_Model\_Answers\_to\_the\_Python\_Assignment\_2.pdf 0.01 MB

Download

Delete

Type Your Answer

In case of scripts and tags in your answer text, it will be sanitized and removed in evaluation screen of Faculty. Please add such content in a text file and upload to prevent an erroneous evaluation.

Source Markdown Σ

🔗 📄 🖨️ 🔍 ⌂ ↺ ↻

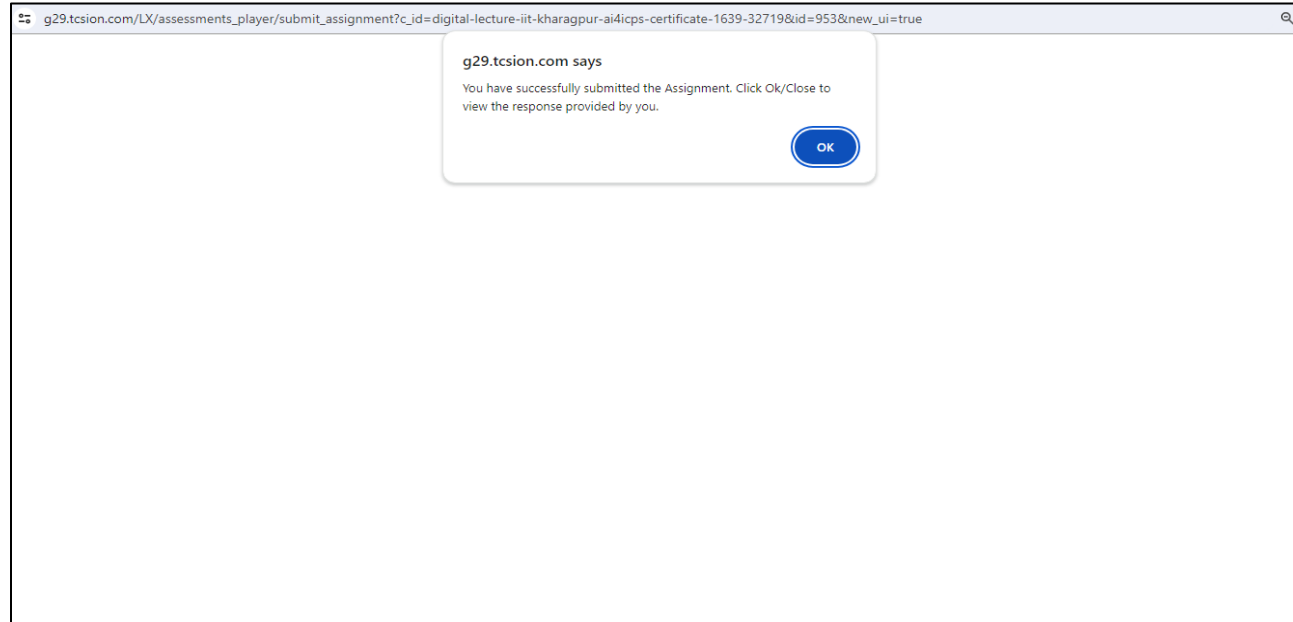
A - A + ☰ 🔊 🔇 🔄 🚫

Styles Format Font Size B I U

☰ ☷ ☹ ☶ ☵ ☴ ☳ ☲ ☱

ⓘ

# How to Upload Assignments





# Quizzes

Number of Quizzes to  
be conducted – **12**

Each quiz will be  
uploaded on every  
**Saturday 5 PM to 6  
PM**

**Quiz Marks:**

All 12 Quizzes to be  
Attempted by each  
Learner to attain  
Certificate of  
Completion

# Certificate Criteria

## Certificate of Completion

Certificate of Completion (CoC): The Certificate of Completion will be given to those participants who have attended all the quizzes and submitted all the assignments.

## Certificate of Merit

Certificate of Merit (CoM): The Certificate of Merit will be given to the top 10% performers on the basis of their quiz and assignments marks. There will be a CoM ceremony at the IIT Kharagpur campus where the participants will receive the hard copy of the CoM certificates.

## Path – Quiz and Recorded Session

Path to page for taking the quiz:

Launch Course-> Digital Lecture  
Component-> Week No.->  
Module No. ->ASSESSMENT

Path to page for accessing  
**recorded sessions:**

Launch Course-> Digital Lecture  
Component-> Week No.->  
Module No. -> Lecture Title

Path to page for accessing  
discussion forum for Q & A after  
the session:

Launch Course-> Discussion  
Room

# Course Rules

- Students must take a 30-minute quiz every Saturday from 5:00 – 6:00 pm.  
(Required for course completion and getting marks)
- An assignment will be floated on the day of the lecture and the students must submit assignments every week on the previous week's lecture topics. (Required for course completion).
- Students have to submit programming assignments floated in some of the weeks. (Required for course completion and getting marks).
- Quiz and Programming assignments will be used for grading the students. They will receive marks out of 100.

# Course Rules

- Students will receive:
- Certificate of completion for attending all the lectures, quizzes and submitting all the assignments.
- Certificate of merit will be given to the top 10% of the participants basis assignment and quiz marks
- Students will receive marks out of 100 if they have completed the course i.e. are eligible for completion certificate.
- Students who have not completed all the requirements for the course will not receive any marks.

# National Proficiency Test Details



## NPT Licenses

Licenses will be issued to users post the completion of Live lecture sessions.

**Duration of completing NPT:** Within 3 Months post the Digital Lecture Sessions.

## Link to Product Page:

<https://www.tcsion.com/hub/national-proficiency-test/>



Questions?

Thank you