



IIOE Multilevel Training Series - Big Data General Level

Empowering University Educators and Professionals with Data Literacy



UNESCO-ICHEI



Under the guidance and inspiration of Education 2030 and SDG4, UNESCO International Centre for Higher Education Innovation (UNESCO-ICHEI) was established in Shenzhen, China, in June 2016, as a UNESCO Category 2 Centre. Relying on the advantages of Shenzhen's Hi-tech sector and drawing upon China's experience with the massification of its higher education, UNESCO-ICHEI intends to improve quality and promote equity in higher education to nurture human capital, as a response to the fourth industrial revolution and rapid development of digital economies across the world.

In partnership with global higher education institutions (HEIs) and enterprises, UNESCO-ICHEI officially launched its flagship project, the International Institute of Online Education (IIOE) in April 2020. IIOE aims to improve access to quality content for teachers' professional development, promote exchange of knowledge, and strengthen university-industry collaboration on a global scale.

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What You Can Learn from this Training Programme

In the digital age, data are generated from all aspects of our life. The science of big data deals with large, diverse sets of information that grow at ever-increasing rates. In education, big data open new potential for the effective acquisition of information, precise resource allocation, evidence-based policymaking and administration, and improved quality of education. These applications also bring new challenges to educators and professionals in higher education as they are increasingly required to develop and upgrade data literacy in their teaching and research. In this training programme, IIOE introduces big data science in the context of higher education. It aims to equip learners with fundamental concepts of data analysis, real-life cases of big data applications in teaching and research, and diverse opportunities for hands-on practice.

Leading Instructor



Dr. Wen Zheng

B.Eng. (Wuhan University, China)
M.Sc., Ph.D. (Waseda University, Japan)

“ Welcome to the IIOE Big Data Training Programme! I am Wen Zheng, Assistant Professor of the Department of Communications and Computer Engineering at Waseda University. My research focuses on a wide range of ICT-related subjects, including information-centric networking, big data, emergency management system, internet of things (IoT), edge computing, and blockchain technologies. I am glad to navigate you through the science of big data and its applications in education and research. The programme will provide you with an overview of how big data are acquired, analysed, visualised, and interpreted. ”

Prospective Learners

Educators and professionals in higher education who wish to enhance data literacy and data analysis skills to improve efficiency in their teaching and research work.

Training Modules and Content

Module

1

Entering the World of Big Data

This big data training programme begins with an overview of big data applications and technologies. **The module explores how big data are used in various fields as well as basic concepts of the data science. It showcases an array of real-life cases of big data applications in education and beyond.**

Course Content

- Chapter 1 Introduction to Big Data
- Chapter 2 Big Data Technologies and Applications
- Chapter 3 Big Data in Natural Disaster Prediction
- Chapter 4 Big Data in Disaster Response and Recovery
- Chapter 5 Big Data Visualisation in Education
- Chapter 6 Big Data and Smart Learning
- Chapter 7 Big Data and Institutional Research in Universities
- Chapter 8 Big Data-Empowered Educational Applications
- Chapter 9 Big Data and Smart City
- Chapter 10 Big Data in Tourism

Assignment

Identifying the applications of big data in learners' local contexts.

10 Videos (2h)+1 Assignment (20min)

Module

2

The Science Behind Big Data Applications

This module builds on the first module's introduction of big data applications and deciphers the science behind the digital age. It's designed to teach learners about the essential data analysis concepts, methodologies, and tools (e.g. **Microsoft Excel, Python, and R**), and the approaches to visualise, analyse, and interpret big data.

Course Content

- Chapter 1 Data Analysis Overview
- Chapter 2 Data Analysis Methodology
- Chapter 3 Data Analysis Case Study
- Chapter 4 Data Analysis Tools
- Chapter 5 Data Analysis in Excel
- Chapter 6 Data Visualisation
- Chapter 7 Data Analysis Report
- Chapter 8 Data Analysis Report Cases

8 Videos (3h) + 3 Reading Materials (3h) + 1 Quiz (20min)

Training Modules and Content

Module

3

Big Data Empowered Education (Practical Exercise)

The ongoing digital transformation of higher education allows teachers and HEIs to generate information from every aspect of their work, from teaching and learning activities to administration and management. This module shows you how education-related information transforms into numbers, how the collection of numbers transforms into data, how data can be eventually analysed and interpreted by tools such as **Hadoop, HDPS, and Hive**.

Assignment

Designing a datafication plan based on a real-life educational application.

3 Reading Materials (3h) + 1 Assignment (20min)

Earn your certificate anytime, anywhere



A Training Programme that Meets Your Needs

IIOE tailor-designed this training series for higher education educators and professionals to understand the applications of big data in teaching, research, student assessment, and administration and management. Upon completion of this programme, learners will be able to practise basic data analysis techniques with common software.



The 1st Programme of IIOE's Multilevel Training Series



Tailor-Designed Content for University Educators and Professionals



Three Live Tutoring Sessions for Questions and Answers



Experienced Instructors with Academic and Professional Backgrounds



Real-Life Cases on the Applications of Big Data in Education and Research



Free Registration and Certification for University Teachers

Sign-up Now

- Training starts on: **28 Sept, 2020**
- Language of instruction: **English**
- Please enrol at <https://iioe.ichei.org/training>
- Deadline for enrolment: **26 Sept, 2020**
- Duration of training: **3 Weeks**

