



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



**TII** TRADE  
INVESTMENT  
INNOVATION  
KNOWLEDGE HUB

# INDUSTRY 4.0

## AN INTRODUCTION

### ONLINE TRAINING COURSE

<https://tii.unido.org>

The accelerated and widespread expansion of digital technologies across business and society has resulted in the emergence of the Fourth Industrial Revolution (4IR), also known as Industry 4.0 (I4.0). While the 4IR describes a technologically driven paradigm change that affects all spheres of life, Industry 4.0 represents the economic point of view, focusing on industry, manufacturing and the fact that major technological advancements are revolutionizing industrial production. Industry 4.0 will affect all sectors and disciplines, bringing about a structural transformation in the global economy and leading to a new division of labour, which will have a huge impact on developing countries. Current production systems, and global value chains, will become more dynamic, flexible, efficient and sustainable, with high possibilities for customization and personalization. Industry 4.0 has the potential to contribute to increased resource efficiency and help to achieve environmental sustainability.

These benefits will not be without challenges. Rapid technological advancements will affect future patterns of productivity, competitiveness and employment. They will exert a strong influence on education and skill requirements as well as income distribution, and they will also play a role in determining the evolving international economic division of labour, inter alia through their impact on global value chains and thus the future position of developing countries and least developed countries (LDCs) in the global economy. The biggest concern will be the impact new, digital technologies will have on jobs in developing countries, especially LDCs, since increasing automation of production processes and the displacement of workers by machines is likely to eliminate routine jobs. This will likely result in the polarization of the labour market. Despite inevitable job losses, developing countries and LDCs can find their niche, adapt and leapfrog.

## INDUSTRY 4.0

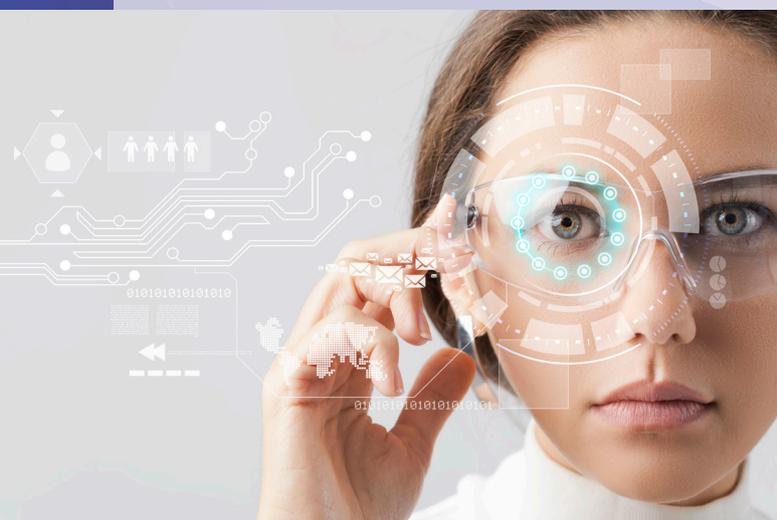
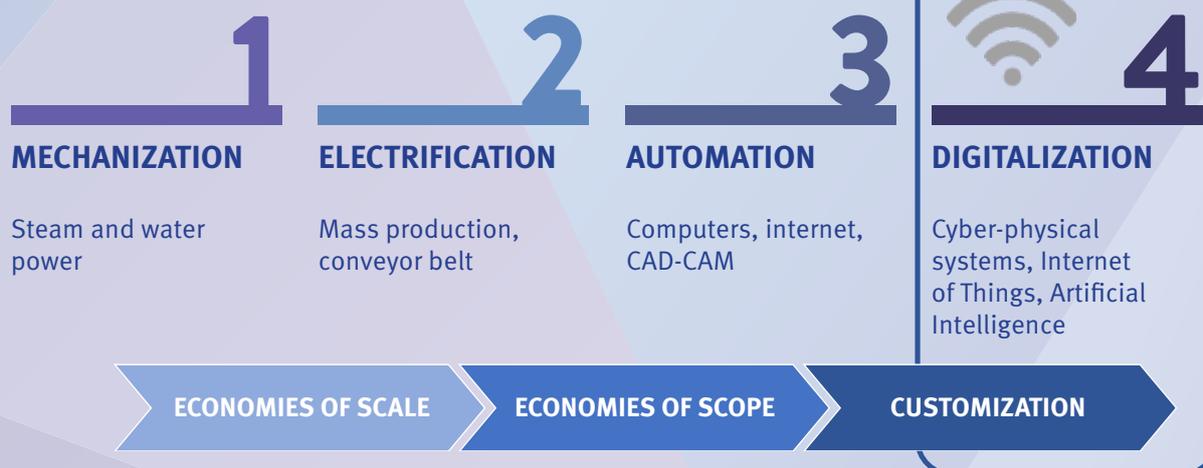
Industry 4.0 includes concepts, tools and applications that complement a smart embedded system of machines able to communicate with each other and people, and perform autonomous tasks in industrial production processes. The main tools include cyber-physical systems (CPS), the Internet of Things (IoT), big data and cloud computing, autonomous robots, simulation and visualization models, and additive manufacturing. Artificial Intelligence (AI) enhances industrial processes by enabling the synergetic collaboration between humans and robots in smart factories.

## TARGET AUDIENCE

This training course has been designed to provide a strong foundation on the basics of Industry 4.0 and the Fourth Industrial Revolution (4IR). The online training aims to demonstrate the implications for developing countries, particularly LDCs, outline related challenges and elaborate on how opportunities that Industry 4.0 provides can be leveraged. The training modules have been designed in such a way that governance, institutions, policymakers, SMEs and individuals can benefit from the content.

## INDUSTRIAL REVOLUTIONS

The four stages of industrial revolution and their main technological advancements.



## TRAINING MODULES

- Module 1:** Context of Industry 4.0
- Module 2:** Elements of Industry 4.0
- Module 3:** The Business Perspective
- Module 4:** Implications
- Module 5:** The Developing Country Perspective
- Module 6:** The Way Forward

*Upon successful completion, participants will receive a certificate.*