LMI.04Dis_ABLED

Adapted Labour Market and Career Information Guide

Opportunities for Persons with Disabilities (PWDs) in the open labour market

Textbook for Guidance Practitioners

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P6	PO	UNIAO DAS FREGUESIAS DE GONDOMAR (SCOSME) VALBOM E JOVIM	

TABLE OF CONTENTS

Περιεχόμενα

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Introduction

In today's global landscape, understanding the employment dynamics of individuals with disabilities holds paramount importance. With an estimated one billion people worldwide living with disabilities, corresponding to fifteen percent of the global population, a significant proportion of them falls within the employable age bracket. However, a critical disparity emerges when examining the employment scenario for this demographic, as a substantial number are often categorized as inactive within labor markets across many nations. This classification excludes them from the realms of both employment and unemployment, rendering them invisible as potential job seekers, as highlighted by authoritative sources (ILO, OECD, 2018). The subsequent narrative unveils a staggering contrast in inactivity rates between individuals with disabilities and those without, particularly shedding light on the exacerbated challenges faced by women with disabilities. Amid these circumstances, a closer examination within the European Union further elucidates the stark gaps in employment, poverty risk, and educational attainment. In fact, when looking at the European Union, we see that there is a remarkable 50.8 % of people with disabilities who are employed compared to up to 75% of those without disabilities, more persons with disabilities are at risk of poverty or social exclusion compared to persons without disabilities (28.4% compared to 18.4%) and fewer persons with disabilities attain a tertiary degree than persons without disabilities (29.4% compared to 43.8%) (European Commission, 2021). These findings underscore the pressing need to prioritize the broader accessibility and integration of persons with disabilities, resonating as a pivotal agenda within the European Union's overarching policies (European Commission, 2021).

The Adapted LMI and Career Information Guide acknowledge that persons with disabilities (PWDs) have diverse skills and talents that make them valuable contributors to the open labor market[1]. These individuals bring unique perspectives, creativity, and resilience to the workforce. Recognizing and harnessing their diverse abilities not only promotes inclusion but also enriches the overall dynamics of workplaces. Creating accessible and accommodating environments allows PWDs to showcase their talents across various industries, contributing meaningfully to the success and diversity of the open labor market.

The term “disability” covers an extremely broad spectrum of conditions, symptoms and requirements. In the definition of the United Nations Convention on the Rights of Persons with Disabilities (art. 1) it is stated that “Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others”. A disability may be visible or invisible, severe or mild, permanent or temporary, isolated or a combination of these. It may exist from birth or be acquired later in life.

[1] The "open labor market" refers to the general employment sector that is not restricted to a specific industry, company, or demographic. In an open labor market, individuals have the opportunity to seek employment across various sectors and organizations based on their skills, qualifications, and preferences. This contrasts with closed or specialized labor markets, where access to employment is limited to certain industries or professions. An open labor market encourages competition, diversity, and a broad range of career opportunities for individuals seeking employment.

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In this Guide the adapted labour market information presenting different inclusive career prospects covers the following types of disabilities:

1. **Mobility Impairments:** Mobility impairments involve limitations in a person's movement or ability to navigate their environment. This can include difficulty walking, using stairs, or maintaining balance. Mobility impairments can be caused by various factors, such as injuries, diseases, or congenital conditions. Examples include paralysis, limb loss, or muscular dystrophy.
2. **Visual Impairments:** Visual impairments encompass a range of conditions that affect a person's vision. This can include blindness or partial sight, impacting the ability to see clearly. Visual impairments can be congenital or acquired due to injuries or medical conditions.
3. **Hearing Impairments:** Hearing impairments pertain to conditions that affect a person's ability to hear. This can range from partial hearing loss to complete deafness. Hearing impairments can be present from birth or result from injuries, infections, or age-related factors.
4. **Cognitive/Intellectual Disabilities:** Cognitive disabilities involve challenges related to cognitive functions such as memory, problem-solving, attention, and learning and are characterized by limitations in intellectual functioning and adaptive behaviors. Individuals with intellectual disabilities may face challenges in learning, problem-solving, and daily life skills. Individuals may have difficulties with learning, reasoning, and daily life activities. These disabilities can be present from birth or result from conditions like traumatic brain injuries, neurodevelopmental disorders, or neurodegenerative diseases. Conditions like Down syndrome, Fragile X syndrome traumatic brain injury, or intellectual developmental disorders fall under this category.
5. **Speech Impairments:** Speech impairments involve challenges in verbal or non-verbal communication. This can include difficulty articulating words, stuttering, or challenges in understanding and expressing language.
6. **Neurodiversity (Autism, ADHD, etc.):** Neurodiversity is a concept that recognizes and celebrates neurological diversity. It includes conditions such as Autism Spectrum Disorder (ASD), Attention-Deficit/Hyperactivity Disorder (ADHD), and other neurodevelopmental variations. Autism involves challenges in social interaction and communication, while ADHD results in difficulties with attention and hyperactivity. Neurodiversity emphasizes the value of diverse ways of thinking and perceiving the world. In the context of the workplace, embracing neurodiversity means creating an inclusive environment that accommodates and values the unique strengths and perspectives of individuals with neurological differences. This approach acknowledges that neurodivergent individuals may have distinctive talents, skills, and ways of thinking that can contribute positively to the workplace.
7. **Chronic Illness:** Chronic illness refers to long-term medical conditions that persist over an extended period. These conditions often require ongoing management and may impact a person's daily life and well-being. Examples include diabetes, hypertension, or autoimmune disorders. These conditions often necessitate continuous medical care and lifestyle adjustments.
8. **Mental Health Conditions:** Mental health conditions encompass a broad range of disorders affecting emotional, psychological, and social well-being. Examples include depression, anxiety, bipolar disorder, and schizophrenia. Depression involves persistent feelings of sadness, anxiety entails excessive worry, and schizophrenia may involve disruptions in thought processes. Mental health conditions can vary in severity and duration.Treatment often includes therapy and medication.

The Adapted LMI and Career Information Guide seeks to highlight diverse work prospects for persons with different disabilities, which is essential for creating a society where everyone, regardless of their

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abilities, can contribute and thrive. Emphasizing a variety of work prospects for PWDs promotes inclusivity and challenges stereotypes. It sends a powerful message that people with disabilities are capable of contributing across various industries and roles. This approach supports the following aims towards creating an inclusive economic landscape with respect for human rights and equal opportunities for all:

1. **Tailored Employment Opportunities:** Different disabilities may come with unique strengths and capabilities. By highlighting various work prospects, employers can tailor job opportunities to match the skills and preferences of PWDs, fostering a better fit between the individual and the role.
2. **Addressing Specific Needs:** Different disabilities may require specific accommodations or considerations in the workplace. By understanding the specific needs associated with various disabilities, employers can create environments that support PWDs effectively.
3. **Breaking Barriers:** Highlighting diverse work prospects for PWDs helps break down barriers and dispel misconceptions about what individuals with disabilities can achieve. This, in turn, fosters a more inclusive society and workplace culture.
4. **Encouraging Career Exploration:** PWDs, like anyone else, benefit from having a range of career options. By showcasing different work prospects, individuals with disabilities can explore various paths and find roles that align with their interests and aspirations.
5. **Enhancing Representation:** Increased visibility of PWDs in diverse work roles contributes to better representation. This representation is essential for challenging biases, inspiring others, and creating role models for individuals with disabilities.
6. **Supporting Personalized Career Paths:** Recognizing diverse work prospects acknowledges that individuals with disabilities have unique career journeys. Some may excel in technology, while others may thrive in creative fields or public service. Tailoring opportunities allows for personalized career paths.
7. **Cultivating Employer Awareness:** Employers need to be aware of the potential contributions and capabilities of PWDs with different disabilities. Highlighting various work prospects encourages employers to adapt their practices, creating inclusive workplaces that accommodate diverse needs.

The Adapted LMI and Career Information Guide for PWDs aim to serve as an informational assistive tool mainly for trainers, educators, career guidance practitioners and social inclusion professionals. The Guide presents the core labour market trends, occupational sectors and selected 20 occupations suitable for PWDs, as a valuable source of information to be used by VET, career guidance and inclusion experts and PWDs. The impact of digitalization and new technologies on the job market, the trends in the green transition, and the effects of COVID-19 pandemic as well as other catalytic factors affecting labour market inclusion of PWDs in the open labour market are highlighted.

The Guide also explores the skills required to build careers in conditions of disability, emphasising personal factors that play a crucial role in achieving success in the workplace. Human development is a continuous, unstoppable process, even in the presence of disabilities. It's influenced by personal and environmental factors. Personal factors include age, gender, values, interests, and skills, which shape career choices. Values guide individuals towards careers aligned with their principles, while work values impact choices related to organizational culture and work-life preferences.

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The contexts and elements that facilitate job placement for PWD are also examined. Successful inclusion of individuals with special needs in the workplace requires a shift in perspective from seeing it as an obligation to recognizing it as an opportunity. This change involves three key aspects: enhancing the potential of individuals with disabilities by focusing on their skills, identifying tasks that benefit both the organization and the employee, and negotiating accommodations through collaboration among stakeholders. Building a network, providing training, and sharing experiences are crucial for successful inclusion. Factors influencing the inclusion of people with disabilities in the workplace include the physical work environment, adaptability of workspaces, interpersonal relationships, and addressing discrimination.

Starting from the ICF approach to the functioning of the person (Chapter 2), Disability is redefined as an umbrella term that encompasses a person's functioning challenges at both personal and social levels. Unlike the traditional biomedical approach, the ICF framework considers not only biomedical and pathological factors but also social interactions. The job descriptions developed in this guide, are built upon this multi-perspective approach, emphasising the interplay between individuals and their environment. By adopting the ICF language, we provide detailed job profiles that account for contextual and environmental factors, specifying activities, skills, expected outcomes, knowledge domains and working conditions. Our goal is to shed light on the holistic functioning of individuals and promote inclusive work environments, offering insights into career paths and development opportunities for each profession.

Evidently, the 20 job descriptions do not encompass the full range of opportunities accessible to PWDs. Nonetheless, their structure and content can serve as a source of inspiration and a practical model for VET, career guidance, and inclusion professionals to craft additional job descriptions, to guide and support PWDs, and contribute to successful careers in conditions of disability.

The Guide addresses career and social inclusion professionals, raising their awareness on the different career options for PWD, in order to enable the access of PWDs to quality career information and VET opportunities through updated LMI material adapted to their needs and in line with the needs of the labour market.

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1. The future of work for PWDs - new trends, challenges and opportunities in the open labour market

1.1 Disability inclusive labour market

The future of work for People with Disabilities (PWDs) is a topic of increasing importance, as societies around the world strive for greater inclusivity and diversity in the labour market. According to the World Health Organization (WHO), employment and participation barriers for people with disabilities are defined as factors limiting function and creating disability through their presence or absence. These factors are divided into categories like physical, social, communication, attitudinal, policy, programmatic, and transportation and include the following barriers:

- A physical environment that is not accessible.
- Lack of assistive technology.
- Stereotypes or negative attitudes about disability.
- Services, systems, and policies that are non-existent or hinder the involvement of all people with a health condition in all areas of life.

A disability-inclusive workplace ensures equal opportunities, accessibility, and reasonable accommodations for people with disabilities (PWDs). A reasonable accommodation is any change to the application or hiring process, to the job, to the way the job is done, or the work environment that allows a person with a disability who is qualified for the job to perform the essential functions of that job and enjoy equal employment opportunities. The goal is to create an accessible work environment, promote diversity and ensure that PWDs can fully participate in the workforce and contribute their skills and talents. The key accommodations for creating a disability-inclusive workplace include:

1. **Physical Accommodations**: Ensure that physical workspaces are designed to be accessible, providing:
    - Wheelchair ramps and accessible entrances, elevators, wider doorways, and accessible restrooms for mobility-impaired individuals.
    - Modified workspaces, with djustable desks and ergonomic furniture to accommodate individuals with mobility limitations or specific comfort needs.
    - Accessible parking spaces close to the entrance for individuals with mobility impairments.
    - Braille signage and tactile indicators for individuals with visual impairments.

2. **Technological Accommodations:** Ensure digital accessibility with adaptive technology, hardware and software designed to accommodate various disabilities, providing
    - Screen readers: Software that converts text on a computer screen into synthesized speech or Braille output for individuals with visual impairments.
    - Voice recognition software: Allows individuals with mobility impairments to control computers or devices using voice commands.
    - Alternative input devices: Keyboards, mice, or touchpads adapted for individuals with mobility impairments, such as sip-and-puff devices or mouth sticks.

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- Captioning and transcription services: Provide access to audio content for individuals with hearing impairments.
- Text-to-speech software: Converts written text into spoken words, aiding individuals with reading difficulties or visual impairments.
- Communication boards or devices: Assist individuals with deaf/ speech impairments in expressing themselves through symbols, pictures, or text, during meetings, presentations, or customer interactions.

3. **Work-flow accommodations:** Ensure the work-flow adjustments required to resolve any functional limitation(s) to enable PWDs to perform their job equally and effectively, providing:
    - Inclusive Hiring Practices: Implement inclusive hiring practices that focus on skills, qualifications, and potential rather than focusing on disabilities. This can involve the removal of bias in the recruitment process and providing reasonable accommodations during interviews.
    - Flexible work arrangements: Allow employees to adjust their work hours or locations to accommodate their specific needs.
    - Job restructuring: Modifying job tasks or responsibilities, reassign to another position and give clear guidelines to better align with an individual's abilities and limitations.
    - Disability awareness training: Educating colleagues and managers about disability-related issues and fostering an inclusive work environment.
    - Mentorship and Career Development: Implement on-the-job mentorship programs and career development opportunities that help PWDs advance in their careers.

In addition, general policies and practices to promote a disability inclusive labour market may include:

- Government and Legal Support: Enforce and strengthen anti-discrimination laws and regulations that protect the rights of PWDs in the workplace. Encourage compliance through incentives and penalties.
- Accessible Education and Training: Ensure that educational and training programs are accessible to PWDs. This includes making sure that materials are available in accessible formats and that online courses are designed to accommodate various disabilities.
- Entrepreneurship and Self-Employment Support: Offer resources and support for PWDs interested in entrepreneurship, self-employment, or freelancing, as these opportunities can provide greater flexibility and independence.
- Social Inclusion Initiatives: Encourage social inclusion through awareness campaigns, events, and community outreach to promote a positive and inclusive view of PWDs in society.
- Monitoring: Ensure mechanisms for the data collection and monitoring of the employment status and experiences of PWDs to identify areas for improvement and measure progress over time, so as to enable evidence-based disability inclusive policies and practices.
- Collaboration with Disability Organizations: Promote collaboration of employers and social partners with disability organizations, civil society organisations and advocacy groups to gain insights, share best practices, and leverage resources to promote disability inclusion.

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A disability-inclusive labor market benefits not only PWDs but also employers and society as a whole by tapping into a diverse pool of talent and fostering a more equitable and compassionate workforce. It is essential for creating a fair and inclusive society where everyone has the opportunity to work, contribute, and lead fulfilling lives.

By recognizing the need to advocate for greater diversity in the workplace and increase opportunities for all, employers can work to remove employment obstacles for professionals with disabilities. The challenge is how to ensure that the future of work is inclusive, leaving no one behind, including the one billion persons with disabilities living on our planet[2]. This can be facilitated or burdened by global labour market trends. On the other hand, the key to a more disability-inclusive labor market is a combination of supportive policies, improved accessibility, changes in societal attitudes, and a commitment from social inclusion professionals and employers to promote diversity and inclusion in the workforce.

Within this scope, **a SWOT analysis for the employment inclusion of People with Disabilities (PWDs)** can help identify the strengths, weaknesses, opportunities, and threats associated with efforts to create a more inclusive workforce involving PWDs.

Strengths:

1. **Diverse Skills and Perspectives:** PWDs often bring unique skills and perspectives to the workplace, enhancing creativity and problem-solving.
2. **Strong Advocacy Groups:** There are strong advocacy organizations dedicated to promoting the rights and interests of PWDs, which can provide support and resources.
3. **Legal Protections:** Many countries have laws and regulations in place to protect the rights of PWDs in the workplace, ensuring equal opportunities and reasonable accommodations.
4. **Corporate Social Responsibility:** Many companies are recognizing the importance of diversity and inclusivity and are committed to fostering a more inclusive workforce.
5. **Technology Advancements:** Assistive technology and adaptive tools have advanced, making it easier for PWDs to perform various job tasks.

Weaknesses:

1. **Stigma and Bias:** Stigmatization and bias against PWDs still exist, which can lead to discrimination and limited opportunities.
2. **Skills and Education Gaps:** Disparities in access to education and skills development can limit the employability of some PWDs.
3. **Accessibility Challenges:** Workplaces and digital platforms may not be fully accessible, hindering the participation of PWDs.
4. **Lack of Awareness:** Employers and the general public may lack awareness about the capabilities and needs of PWDs, leading to misconceptions.
5. **Transportation and Infrastructure Issues:** Some PWDs face challenges related to transportation and inaccessible physical infrastructure.

Opportunities:

1. **Inclusive Hiring Practices:** Employers have the opportunity to adopt inclusive hiring practices, emphasizing skills and abilities rather than disabilities.

[2] Making the future of work inclusive of persons with disabilities (ilo.org)

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2. **Remote Work:** The growth of remote work can eliminate many physical barriers, allowing PWDs to work from home or accessible workspaces.
3. **Skill Development Programs:** Investments in training and skill development can empower PWDs to access a broader range of employment opportunities.
4. **Entrepreneurship:** PWDs can explore self-employment and entrepreneurship, leveraging their unique skills and experiences.
5. **Global Initiatives:** International organizations and governments are promoting disability inclusion and encouraging the implementation of inclusive policies.

Threats:

1. **Economic Disparities:** PWDs often face economic disparities, as they are more likely to be unemployed or underemployed.
2. **Policy Reversals:** Changes in government policies and regulations may affect the rights and protections of PWDs in the workplace.
3. **Technological Gaps:** Not all PWDs have access to the latest assistive technology, which can limit their participation in the workforce.
4. **Recession and Economic Uncertainty:** Economic downturns can result in reduced job opportunities for PWDs.
5. **Changing Labor Market Dynamics:** Shifts in the job market, such as automation, may impact the employment prospects for PWDs, necessitating ongoing adaptation and skill development.

The above generalized SWOT analysis for PWDs' employment inclusion can be a valuable tool for disability related stakeholders, such as VET organizations, career guidance and social inclusion providers, as well as policy makers and relevant professionals. It advocates formulating adequate strategies and adapted practices that leverage strengths and opportunities while addressing weaknesses and mitigating threats to ensure equal access of PWDs to employment opportunities. The factors identified above have particular interest for the design of adapted career guidance and counseling services, which ensure accessibility as well as adequate information resources for education and labour market opportunities for PWDs.

In addition, a deeper approach to current labour market trends and factors shaping and affecting equal employment opportunities for PWDs is very important. These new trends and factors are briefly described below.

Sheltered employment for PWDs

Sheltered employment, also known as sheltered workshops or enclave work, is a form of employment specifically designed for people with disabilities (PWDs). In sheltered employment, individuals with disabilities work in a segregated or specialized work environment, typically operated or funded by government agencies, nonprofit organizations, or vocational rehabilitation programs. While sheltered workshops can provide certain benefits, they are also a subject of debate and have faced criticism in recent years. Here are some key aspects to consider:

Features of Sheltered Employment:

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1. **Segregated Work Environment:** In sheltered workshops, PWDs work in a separate, often isolated, and controlled environment away from mainstream workplaces.
2. **Supervised and Supportive:** Work in sheltered employment is closely supervised, and individuals receive support tailored to their specific needs. This support may include job coaching, training, and personal care assistance.
3. **Piecework or Assembly Tasks:** The work often involves repetitive, low-skill tasks such as assembly, packaging, or simple manufacturing. Compensation is typically based on the quantity of work completed.
4. **Protected Work Environment:** Sheltered workshops are designed to provide a protective environment where PWDs can work without the pressures or challenges often faced in mainstream workplaces.

Critiques and Concerns:

1. **Segregation:** One of the primary criticisms of sheltered employment is that it perpetuates segregation and social isolation. It can limit opportunities for PWDs to interact with the broader community and build social and professional connections.
2. **Low Wages:** Compensation in sheltered workshops is often below minimum wage and based on piecework. This can lead to low income for PWDs and raise questions about fair wages.
3. **Limited Career Growth:** Sheltered employment may not offer opportunities for career advancement or skill development, hindering personal and professional growth.
4. **Stigmatization:** Critics argue that sheltered workshops can reinforce stereotypes and stigmatization of people with disabilities, as they are often hidden from public view.
5. **Lack of Integration:** The model does not promote integration into mainstream workplaces, limiting the potential for inclusion and diversity.

Alternative Models:

In response to concerns about sheltered employment, alternative models have emerged to promote inclusion and greater independence for PWDs:

1. **Supported Employment:** The Supported Employment model focuses on integrating PWDs into mainstream workplaces with the support they need to succeed.
2. **Customized Employment:** This approach tailors job positions to the individual's unique skills and abilities, emphasizing inclusivity.
3. **Community-Based Day Programs:** These programs offer a variety of activities, training, and social interactions to PWDs, promoting community involvement and skill development.
4. **Self-Employment and Entrepreneurship:** Encouraging PWDs to start their own businesses or engage in self-employment allows for greater autonomy and control over their work.

The approach to employment for PWDs is evolving, with an increasing emphasis on inclusion and independence. While sheltered employment may still have a role in certain situations, it is generally seen as less preferable in comparison to more inclusive and person-centered models.

Supported Employment

The Supported Employment model is a well-established approach designed to assist persons with disabilities in finding and maintaining meaningful employment in integrated work settings. It emphasizes providing individualized support to help individuals with disabilities secure competitive employment,

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which means working in positions that pay at least minimum wage and are typically available to individuals without disabilities.

Key components of the Supported Employment model include:

1. **Individualized Placement:** The model starts with a focus on the individual's unique skills, preferences, and strengths. Employment specialists work with the person to identify suitable job opportunities based on their abilities and interests.
2. **Job Development:** Employment specialists engage with employers to create job opportunities that match the individual's skills and requirements. This involves identifying potential employers, understanding their needs, and making job matches.
3. **Job Coaching and Support:** Once a person with a disability is placed in a job, ongoing support and training are provided. Job coaches work with the individual to ensure they learn their job tasks, adapt to the work environment, and maintain employment.
4. **Natural Supports:** The Supported Employment model encourages individuals to build natural supports within their workplace. This might involve developing relationships with co-workers and supervisors who can provide assistance and mentorship.
5. **Customized Employment:** In cases where individuals may not fit into existing job roles, the Supported Employment model promotes customized employment. This means crafting jobs to align with the person's strengths and interests, often by breaking down tasks or creating new roles.
6. **Continuous Assessment:** Regular assessment of the individual's progress and job performance is an integral part of the model. Adjustments and additional support are provided as needed.
7. **Tine unlimited support:** The Supported Employment model typically includes ongoing follow-up and support even after the individual has successfully maintained employment. This ensures continued success and addresses any challenges that may arise.
8. **Person-Centered Planning:** The individual with a disability is at the center of the employment plan. Their goals, preferences, and choices guide the process.
9. **Inclusivity:** The Supported Employment model places a strong emphasis on integrating individuals with disabilities into typical workplaces rather than segregating them into sheltered workshops or other isolated environments.
10. **Collaboration and support to employers:** Supported Employment approach not only benefits the employees with disabilities but also extends support to the employers in making reasonable accommodations, as well as in job matching and customization, training and consultation to creating an inclusive workplace. Collaboration among service providers, employers, individuals with disabilities, and support networks is essential for successful outcomes.

The Supported Employment model has been successful in promoting the inclusion of individuals with disabilities in the workforce, improving their economic self-sufficiency, and enhancing their overall quality of life. It has been particularly effective for people with intellectual and developmental disabilities, but it can be applied to a range of disabilities.

Government programs, disability service organizations, and vocational rehabilitation agencies often implement the Supported Employment model. Its success depends on strong partnerships between these entities, employers, and community resources, as well as a commitment to fostering inclusive and supportive workplaces.

Customized Employment for PWDs

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Customized Employment is an approach to employment that is designed to create job opportunities and workplace arrangements tailored to the unique strengths, abilities, and needs of individuals with disabilities (PWDs). It focuses on maximizing the potential of each person to achieve meaningful and sustainable employment in integrated settings. Key principles and components of Customized Employment for PWDs include:

1. **Person-Centered Planning:** Customized Employment starts with a thorough assessment of the individual's skills, interests, preferences, and support requirements. This person-centered approach ensures that employment goals align with the individual's aspirations and strengths.
2. **Discovery and Exploration:** The process involves exploring potential employment opportunities and environments. It may include job trials, informational interviews, and situational assessments to identify suitable work settings and tasks.
3. **Job Development:** Employment specialists or job coaches work to create employment opportunities based on the individual's skills and the needs of potential employers. This can involve negotiation with employers to craft custom job roles.
4. **Negotiation and Customization:** Customized Employment often requires adjustments to the job description or work tasks to accommodate the individual's abilities and limitations. Employers may provide accommodations, flexible schedules, or job carving to fit the person's strengths.
5. **Natural Supports:** Customized Employment aims to establish natural supports within the workplace. These natural supports can include colleagues and supervisors who are willing and able to assist the individual as needed.
6. **Job Coaching and Training:** Customized Employment typically involves ongoing job coaching and training to ensure that the individual is successful in their role. This support can be gradual and may decrease as the person becomes more independent in their job.
7. **Long-Term Follow-Up:** Continuous follow-up is essential to monitor the individual's progress, address any emerging challenges, and ensure job stability and satisfaction.
8. **Benefits Counseling:** Individuals with disabilities often rely on disability benefits and may be concerned about losing those benefits when employed. Benefits counseling helps them understand how work impacts their benefits and provides guidance on managing this transition.
9. **Inclusivity and Integration:** The ultimate goal of Customized Employment is to place individuals in integrated settings where they work alongside colleagues without disabilities. This fosters a sense of belonging and promotes social inclusion.
10. **Adaptive Technology and Accommodations:** Customized Employment may involve providing adaptive technology, tools, or accommodations to facilitate the person's work and maximize their performance.
11. **Collaboration and Support:** Customized Employment relies on collaboration between employment specialists, vocational rehabilitation counselors, employers, and the individual to ensure a successful employment match.
12. **Customized Self-Employment:** In some cases, Customized Employment can lead to self-employment or entrepreneurship, where individuals with disabilities create their own businesses tailored to their skills and abilities.

Customized Employment is recognized as a highly effective approach for PWDs, as it shifts the focus from fitting individuals into existing job roles to creating job roles that fit the individual. It promotes inclusion, independence, and job satisfaction while helping to meet the unique needs and preferences of PWDs in the workforce. Customized Employment is consistent with the principles of disability rights and the push for greater integration and community participation.

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Community-based day programs

Community-based day programs for PWDs can provide meaningful employment opportunities, social interaction, and skill development. These programs are designed to support the inclusion and integration of persons with disabilities into their communities. Here are some key points to consider when it comes to employment in community-based day programs for PWDs:

1. **Variety of Employment Opportunities:** Community-based day programs often offer a wide range of employment opportunities that cater to the interests and abilities of individuals with disabilities. These can include jobs in manufacturing, assembly, packaging, gardening, arts and crafts, and more. The goal is to provide fulfilling work that aligns with an individual's skills and interests.
2. **Person-Centered Planning:** These programs typically use a person-centered planning approach, where the individual's preferences, goals, and strengths are at the forefront. This approach helps in tailoring the employment opportunities to suit the individual's needs.
3. **Skills Development:** These programs often focus on developing various life and employment skills. This may include vocational training, communication skills, time management, and problem-solving skills. The aim is to enhance the individual's independence and employability.
4. **Social Interaction:** Community-based day programs promote social interaction and community integration. Individuals have the opportunity to interact with their peers and the broader community, which can improve their social skills and reduce social isolation.
5. **Supportive Staff:** The programs typically have trained staff who provide supervision and support. These staff members may include job coaches who assist individuals in learning their job tasks and adapting to the work environment.
6. **Advocacy and Inclusivity:** Many community-based day programs work on advocacy and inclusivity, promoting the rights and inclusion of individuals with disabilities in society. They may engage in activities to raise awareness about disability rights and promote a more inclusive community.
7. **Community Partnerships:** Some programs collaborate with local businesses and organizations to create employment opportunities within the community. This not only benefits individuals with disabilities but also fosters a more inclusive community.
8. **Funding and Resources:** Funding for community-based day programs can come from various sources, including government agencies, non-profit organizations, and private contributions. Access to these programs may vary depending on the region and the specific programs available.
9. **Transition Services:** Many community-based day programs also offer transition services to help individuals move from the program to competitive employment if that is their goal. These services may include job placement assistance and continued support in the workplace.

It's important to research and connect with local community-based day programs in your area to understand the specific services and opportunities they offer for persons with disabilities. These programs can play a crucial role in enhancing the quality of life, independence, and inclusion of individuals with disabilities in their communities.

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1.2 Labour Market Mega-trends shaping future career prospects for PWDs

Digital Transformation, Automation and AI

Taking into account the ongoing digitalisation trends in the labour market, the potential for the creation of new opportunities for better labour market accessibility for persons with disabilities is increasing. Advances in assistive technology are empowering PWDs to participate in the workforce and access new job opportunities. Automation technologies and artificial intelligence (AI) are changing the nature of work. Moreover, new and more flexible types of work are growing in importance, such as online work, platform work, projects work, thus creating incentives for entrepreneurship and self-employment, but also new types of jobs and work tasks are emerging in all sectors. While these trends can create more accessible and accommodating job opportunities for some PWDs, they may also displace certain jobs.

As digitalization and the adoption of new technologies can have both positive and negative impacts on the labor market inclusion of PWDs, the following positive aspects and key considerations should be taken into account in the process of career information provision.

Positive Impacts:

1. **Accessible Software and Hardware, Tools and Assistive Technologies**: Advances in digital technology have led to the development of various assistive technologies, making it easier for PWDs to access information and perform tasks. Screen readers, voice recognition software, and adaptive input devices enable individuals with visual, hearing, or motor impairments to access and use digital tools.
2. **Accessible Websites and Apps:** As awareness of digital accessibility increases, more organizations are making their websites and applications accessible to PWDs. This can include features like text-to-speech, captions, keyboard navigation, and more, making online content and services more inclusive.
3. **AI Customization:** AI-powered tools can be customized to cater to the specific needs of PWDs, enhancing their work experience. For example, AI can adjust text size, color contrast, or provide voice-activated commands to improve accessibility.
4. **Virtual Reality (VR) and Augmented Reality (AR):** VR and AR technologies have potential applications in training, education, and remote work. PWDs can use these technologies for immersive experiences, skill development, and collaboration. VR and AR can create accessible virtual work environments, enabling PWDs to interact with digital content and participate in virtual meetings and training.
5. **Remote Work Opportunities**: The proliferation of remote work due to digitalization has opened up new employment opportunities for PWDs. Digital technology allows individuals to work from the comfort of their homes, which can be particularly advantageous for PWDs who may face challenges with commuting to a physical office. Remote work provides a more flexible and accommodating environment and eliminates barriers related to physical accessibility.
6. **E-Learning and Skill Development**: The digitization of education and training materials, online courses and e-learning platforms provide accessible options for PWDs to acquire new skills and qualifications, which can enhance their employability.

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7. **Entrepreneurship:** Digital platforms have lowered the barriers to entry for starting businesses and working as freelancers. PWDs can leverage their skills and talents to create their own online businesses, providing services, products, or content to a global audience.
8. **E-commerce:** The growth of e-commerce platforms provides opportunities for PWDs to start their online stores, sell products, or offer services without the need for a physical storefront.
9. **Content Creation:** Digital platforms enable PWDs to create content in various forms, including written, audio, and video content. This can lead to opportunities in blogging, podcasting, vlogging, and social media.
10. **Digital Support Networks:** PWDs can connect with support networks, share experiences, and find mentorship opportunities online, helping them navigate their career paths and overcome challenges, as well as expanding their professional network and opportunities globally.
11. **Digital Accessibility Regulations**: Many countries have introduced regulations and standards to ensure digital accessibility, making websites, apps, and digital content more user-friendly for PWDs.

Challenges and Considerations:

1. **Digital Divide**: Not all PWDs have equal access to digital technology. Economic and geographic disparities can limit their access to necessary tools and the internet.
2. **Skills Gap**: PWDs may face a skills gap when it comes to using new technologies. Education and training programs must be designed to address this gap.
3. **Digital Inaccessibility**: While digital accessibility regulations exist, not all websites and digital platforms comply with these standards. This can limit the ability of PWDs to participate fully in the digital economy.
4. **Isolation**: While remote work can be advantageous, it can also lead to social isolation for PWDs. Inclusion and diversity programs need to address the mental health and social aspects of remote work.
5. **Bias and Discrimination**: PWDs may still face bias and discrimination in the digital workplace. Employers and colleagues need awareness and education about inclusivity and diversity.
6. **Privacy and Security**: PWDs may have specific privacy and security concerns related to their disabilities when using digital tools. These concerns should be addressed and protected.
7. **Continuous Learning**: The rapid pace of technological change necessitates continuous learning and adaptation. PWDs must have access to ongoing training and development opportunities.

Digital transformation, automation, and the integration of artificial intelligence (AI) create diverse job opportunities for PWDs. There are several jobs in which PWDs can find accessible employment opportunities, including:

1. **Accessibility Specialists:** PWDs with knowledge of assistive technologies and accessibility standards can work as accessibility specialists. They ensure that digital products, websites, and applications are designed and developed with inclusivity in mind.
2. **Digital Marketing:** PWDs can work in digital marketing roles, managing online advertising campaigns, content creation, and social media outreach to promote products or services.
3. **Data Analysts and Data Entry:** Data-related jobs, including data analysis and entry, offer opportunities for PWDs who may excel in tasks that involve data organization and interpretation.

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4. **Quality Assurance and Testing:** PWDs can work as quality assurance testers, focusing on the accessibility and usability of software applications, websites, and digital products.
5. **Content Creation:** Opportunities exist for PWDs in content creation, including writing, video production, graphic design, and content editing. They can produce accessible content that adheres to web accessibility guidelines.
6. **User Experience (UX) Design:** UX designers ensure that digital products and interfaces are user-friendly and accessible. PWDs can provide valuable insights into designing inclusive user experiences.
7. **IT Support and Helpdesk:** IT support and helpdesk roles offer opportunities for PWDs to provide technical assistance and support to end-users who encounter digital issues.
8. **Cybersecurity:** PWDs with a strong interest in technology and security can pursue roles in cybersecurity, helping organizations protect digital assets from threats and vulnerabilities.
9. **Artificial Intelligence (AI) and Machine Learning:** PWDs with skills in AI and machine learning can work in roles related to the development, deployment, and management of AI systems, chatbots, and automated solutions.
10. **Remote Work and Telecommuting Jobs:** PWDs who may face physical accessibility challenges can take advantage of the remote work opportunities created by digital transformation and automation, including roles in customer service, administrative support, and virtual assistance.
11. **Content Management:** PWDs can work as content managers, overseeing the organization and publication of digital content, including text, images, and videos.
12. **Web Development and Design:** PWDs with web development and design skills can create accessible websites and digital interfaces that cater to a diverse audience.
13. **E-Learning and Online Instruction:** Opportunities exist for PWDs to become online instructors or course developers, helping to create and deliver accessible e-learning content.
14. **AI Ethicists and Consultants:** PWDs with a background in ethics and AI can work as AI ethicists, helping organizations develop ethical AI policies and practices.
15. **Digital Accessibility Consultants:** PWDs with expertise in digital accessibility can work as consultants, helping organizations ensure that their digital products and services are accessible to all.

In summary, digitalization and new technologies may offer significant work opportunities for the labor market inclusion of PWDs, but challenges related to accessibility, skills development, and bias must be addressed through policy initiatives and best practices to ensure equitable opportunities for all. To fully realize these work opportunities, it is important to promote inclusive design practices for digital products and services, as well as to offer training and education programs that address the digital skills gap for PWDs, including both technical and soft skills training. There is a need to ensure that all training and reskilling programs are inclusive. It is also crucial that employers and organizations promote inclusive hiring and work practices. Additionally, governments and advocacy groups play a vital role in ensuring that PWDs have equal access to these opportunities and can participate in the digital workforce.

Neuroprosthetics expanding work inclusiness for PWDs

Neuroprosthetics, a highly evolving field combining neuroscience and prosthetics, plays a pivotal role in expanding work opportunities for persons with disabilities (PWDs). These advanced prosthetic devices are designed to interface directly with the nervous system of the individual, offering a range of benefits that contribute to increased inclusion in the workforce.

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Neuroprosthetics, particularly in the context of limb prostheses, provide PWDs with **enhanced mobility, diminishing workplace accessibility limitations and barriers.** This is crucial for individuals in various professions, facilitating their movement within work environments and enabling them to perform tasks that might be challenging with traditional prosthetics. The integration of neuroprosthetics allows for more precise control of artificial limbs through direct communication with the user's neural signals. This level of control is invaluable in occupations that require fine motor skills, such as those in manufacturing, research, and technology. Neuroprosthetic advancements will also contribute to PWDs' **increased independence** in daily life and work activities. This independence is particularly beneficial in job roles that physical mobility is essential. As neuroprosthetics will become more sophisticated and widely used, PWDs may be able to pursue a broader range of professions and **empowered to choose careers based on their skills and interests rather than being limited by physical abilities**. This will promote PWDs' overall well-being, promoting their confidence and a sense of achievement and contributing to increased productivity, career growth and job satisfaction.

On the other hand, work opportunities for persons with disabilities (PWDs) in the field of neuroprosthetics may offer meaningful career options in several domains, including:

1. **Biomedical Engineering,** focusing on the development and improvement of neuroprosthetic technologies.
2. **Prosthetics and Orthotics design,** specializing in designing and fitting neuroprosthetic devices.
3. **Clinical Research and Development,** focusing on conducting trials, gathering data, and contributing to the advancement of prosthetic technologies.
4. **Quality Control and Assurance,** focusing on quality control and assurance processes in companies manufacturing neuroprosthetic devices, ensuring that prosthetics meet safety and performance standards.

Green transition

The green transition, also known as the green economy or green transformation, refers to a global shift in economic and industrial practices toward sustainability, environmental protection, and reduced environmental impact. This transition is driven by the recognition of the urgent need to address environmental challenges, including climate change, physical resources depletion, and environmental degradation. The green transition is not only about environmental conservation but also economic and social sustainability. It aims to create jobs, promote clean and accessible technologies, reduce poverty, and enhance the well-being of communities. It also acknowledges the importance of addressing environmental justice and ensuring that vulnerable and marginalized populations are not disproportionately affected by environmental challenges. In this scope, the green transition offers various career prospects for persons with disabilities (PWDs). Here are some areas within the green transition that can be accessible and accommodating for PWDs.

1. **Renewable Energy:** The growth of the renewable energy sector, such as solar, wind, biofuels, hydroelectric power and geothermal energy, creates jobs in installation, maintenance, and research and development and project management. PWDs can participate in these roles, with some accommodations and modifications to make the work environment accessible.

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2. **Energy Efficiency:** Improving energy efficiency in industries, buildings, and transportation is a fundamental aspect of the green transition. This involves using technology and practices that reduce energy consumption and waste. Jobs in energy efficiency and conservation involve conducting audits, implementing energy-saving practices, and advocating for sustainable energy use in various industries. PWDs can also work in water and wastewater treatment plants, ensuring that water resources are conserved and treated in an environmentally responsible manner.
3. **Sustainable Agriculture and Farming:** Green agriculture practices aim to reduce the environmental impact of food production, promote organic farming, and minimize the use of chemical fertilizers and pesticides. Sustainable and organic farming practices offer opportunities for PWDs in agriculture, horticulture, and aquaculture, focusing on environmentally friendly and accessible practices. Adaptive technology and accessible work environments can be implemented.
4. **Waste Reduction and Recycling:** The green transition encourages waste reduction, recycling, and the responsible disposal of waste materials. This helps reduce landfill waste and conserves resources. Opportunities for PWDs exist in waste reduction, recycling, and waste management. These roles involve various tasks, including collection, sorting, and processing, which can be adapted. PWDs can also be involved in management, collection, and logistics roles.
5. **Green Building and Design:** Sustainable architecture and construction practices focus on designing buildings and infrastructure that are energy-efficient, environmentally friendly, and accessible. Building and retrofitting structures to be more energy-efficient and environmentally friendly requires a diverse workforce. PWDs can work in design, project management, and construction with the right accommodations and accessible building designs.
6. **Environmental Protection:** Protecting natural ecosystems, biodiversity, and water resources is a key component of the green transition. This includes conservation efforts, habitat restoration, and wildlife protection. PWDs can engage in various roles related to environmental conservation, including environmental technology data analysis, environmental modeling to develop innovative solutions for sustainability, research, advocacy, and education. PWDs can also engage in conservation and habitat restoration efforts, working for organizations dedicated to preserving natural ecosystems. Remote work, accessible research tools, and inclusive outreach efforts can be valuable.
7. **Circular Economy:** Transitioning to a circular economy involves designing products and systems that minimize waste and promote the reuse and recycling of materials. PWDs can aquire expertise in circular economy principles and practices to work as consultants, helping businesses and organizations implement sustainable and inclusive circular economy strategies. PWDs with technical skills can work as repair technicians, fixing electronics, appliances, or machinery. They can also be involved in refurbishing and reconditioning products to extend their lifespan. PWDs can also work in roles related to designing eco-friendly and accessible packaging solutions that reduce waste. The fashion industry is increasingly adopting circular economy practices. PWDs can be involved in roles related to sustainable fashion design, textile recycling, and upcycling.
8. **Green Transportation:** Promoting accessible and eco-friendly transportation options such as electric vehicles, and sustainable public transportation is vital in reducing emissions and improving air quality. These efforts can lead to job opportunities for PWDs in roles related to

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public transportation, electric vehicle infrastructure, and accessible transportation design and solutions, assistive technology development, and accessible urban planning.

9. **Environmental Policy and Regulations:** Governments play a critical role in the green transition by implementing environmental regulations, carbon pricing, and incentives to encourage green practices. Jobs related to environmental compliance and regulations involve ensuring that organizations adhere to environmental laws. PWDs can work as environmental compliance officers or consultants.
10. **Sustainability Reporting and Certification:** Businesses and organizations are increasingly adopting sustainability reporting and seeking green certifications to demonstrate their commitment to environmentally responsible practices.
11. **Green Technology and Innovation:** Advancements in green technology, including clean energy solutions, sustainable materials, and environmental monitoring, drive the transition. PWDs can participate in research and innovation in areas related to environmental sciences, renewable technologies, and accessibility solutions for a sustainable future. Also, the growth of green technology and IT solutions presents opportunities for PWDs in software development, data analysis, and technology support.
12. **Environmental Education and Awareness:** Raising public awareness and educating individuals and businesses about sustainable practices are essential for the success of the green transition. PWDs can contribute to environmental education and outreach initiatives, both online and in-person, by creating accessible educational materials about environmental sustainability, leading workshops, organizing events and advocating for sustainability.
13. **Eco-Tourism and Hospitality:** Sustainable tourism and hospitality industries are expanding. PWDs can work in accessible eco-tourism facilities, accessible travel planning and outdoor excursions, and inclusive customer service for tourists interested in sustainable adventures.
14. **Smart cities jobs:** Smart cities are at the forefront of technological innovation, aiming to enhance the quality of life and sustainability through the integration of digital technologies. Job opportunities in smart cities span various sectors and roles, involving urban planning and design, smart home technologies, smart transportation systems and common good services, IoT (Internet of Things), deploying and managing the network of interconnected devices, disaster response, and community engagement. PWDs can also work in accessibility consultanting, ensuring that smart city infrastructure, digital platforms, and public spaces are designed to be inclusive and accessible to all residents.

As the world continues to prioritize sustainability and environmental responsibility, PWDs have the chance to actively participate in the green transition and contribute to creating a more accessible, eco-friendly, and inclusive future. To ensure that PWDs can fully participate in the green transition and access these work opportunities, it is important to address accessibility and accommodation needs. Additionally, vocational training and educational programs should be designed to prepare PWDs for jobs in the green economy, with an emphasis on accessible learning materials and resources. The green transition offers a unique opportunity to combine environmental sustainability with social inclusivity and equity.

Demographic trends

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Demographic trends can significantly influence labour market inclusion for persons with disabilities (PWDs). Understanding these trends is essential for designing effective policies and practices that promote inclusion and equal opportunities. Key demographic trends that can impact labor market inclusion for PWDs include:

1. **Aging Population:** The aging of the population is a significant and ongoing demographic trend in many parts of the world, including Europe. The median age in the EU increased by 2.5 years (on average by 0.25 years per annum) between 2012 and 2022, rising from 41.9 years to 44.1 in 2021 and 44.4 years in 2022. It increased in almost all EU Member States, rising by 4 or more years in Spain, Portugal, Greece, Italy (Eurostat, 2022). The aging population leads to a growing number of PWDs due to age-related health conditions and disabilities. As the workforce is aging, there may be a greater need for accessible workplaces, flexible work arrangements, and accommodations and support, which can benefit PWDs.
2. **Chronic Health Conditions:** The prevalence of chronic health conditions is increasing in some regions. This can lead to a higher number of PWDs in the labor market. Employers may need to adapt their workplaces and policies to support individuals with these conditions.
3. **Diverse Backgrounds:** Demographic trends also reflect increasing diversity and multiple vulnerability in the workforce. PWDs come from various racial, ethnic, and cultural backgrounds. Understanding and addressing the unique challenges faced by PWDs from diverse backgrounds is crucial for promoting inclusion.
4. **Gender Dynamics:** Gender plays a role in labor market inclusion for PWDs. Women with disabilities often face additional barriers, such as the intersection of gender and disability discrimination. Demographic shifts in gender balance can impact the experiences of PWDs in the workplace.
5. **Educational Attainment:** As educational attainment continues to rise in many parts of the world, there is a growing pool of educated PWDs. Employers should recognize and tap into this talent pool by providing equal access to job opportunities.
6. **Urbanization:** The shift toward urbanization can impact transportation options and the physical accessibility of workplaces. Urban areas may offer more accessible public transportation and a higher demand for inclusive workplaces.
7. **Family Caregivers:** Demographic trends can affect the availability of family caregivers. PWDs who require assistance may face challenges if their potential caregivers are also part of the aging population or if there is an increased demand for caregiving in the labour market.

As regards to emerging **disability inclusive labour market opportunities**, one of the most prominent effects of the demographic trends in the labour market is the increasing demand for healthcare professionals and occupations such as geriatric nursing, physical therapy, and home healthcare aides. This expansion in healthcare not only offers a wide range of healthcare innovation job prospects but also creates accessible roles for individuals with disabilities, especially those talented in caregiving, or administrative tasks. PWDs with expertise in medical research, assistive technology, and healthcare services can contribute to addressing the healthcare needs of older individuals. Another area of growth profoundly impacted by the aging population is the technology sector, increasing the demand for digital accessibility experts and software engineers specializing in assistive technologies. This trend provides job prospects for persons with disabilities who possess expertise in this area, as they can contribute to making digital products and services more inclusive. Moreover, as the aging population seeks to maintain an active and engaging lifestyle, the leisure and hospitality industry is evolving. Opportunities are arising in travel and entertainment catering to older adults and those with mobility challenges. This trend

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includes accessible tourism, event planning, and accommodations designed for individuals with disabilities. Hence, it creates roles in which persons with disabilities can leverage their unique perspectives to provide services that cater to the needs of this demographic. In addition, the diverse skills and experiences of older workers and PWDs can complement each other in the workplace. Cross-generational collaboration can lead to more creative problem-solving and innovation.
Demographic trends offer opportunities and challenges for labor market inclusion for PWDs. By recognizing these trends and proactively addressing the associated challenges, it is possible to create a more inclusive and equitable workforce that benefits individuals with disabilities and society as a whole.

COVID-19 pandemic impact

The COVID-19 pandemic has had significant short-term and long-term effects on the labor market. The pandemic response and recovery efforts highlighted the importance of inclusivity, addressing the needs of PWDs who have been disproportionately affected. While the pandemic has created new challenges, it has also accelerated certain trends that can benefit PWDs in terms of labour market accessibility. It has also underscored the need for a more flexible and accommodating work environment.

According to Ruby Jones, a disability activist, "*The pandemic has improved accessibility for PWD*" enabling flexible and more adaptable working arrangements for disabled workers. Among the **opportunities created by the COVID-19 pandemic towards a disability-inclusive labour market** we can identify the following:

1. **Remote Work and Flexibility:** The expansion of remote work opened up new opportunities for PWDs who may have faced barriers in traditional, physically inaccessible workplaces. Remote work can provide flexibility and eliminate some of the challenges related to transportation and workplace accessibility.
2. **Virtual Job Interviews and Meetings:** Virtual interviews and meetings can be more accessible for PWDs, as they eliminate the need for physical travel and can provide a more controlled environment for communication. Communication tools such as Zoom, and similar applications, allow PWDs to interact, collaborate and make it easier for them to take part in day-to-day tasks (e.g. closed-captioning features or instant-messaging).
3. **Digital Skills and Training:** The pandemic accelerated the need for digital skills, and many training programs and resources became available online. PWDs who acquired digital skills can access a wider range of job opportunities.
4. **Inclusive Practices:** The pandemic highlighted the importance of inclusivity, both in the workplace and in the development of digital tools and services. Employers and organizations are increasingly recognizing the value of inclusivity and accessibility.

On the other hand, the pandemic has brought about several challenges, including:

1. **Job Loss and Economic Impact:** The pandemic led to widespread job losses and economic uncertainty, affecting many workers, including PWDs. Layoffs and business closures had a disproportionate impact on PWDs in some cases.
2. **Rapid Shift to Remote Work:** The rapid shift to remote work created challenges for PWDs who might not have had quick access to the necessary technology or accommodations. Employers had to adapt quickly to make remote work accessible. While the adoption of remote work has created new opportunities for PWDs, such as eliminating some transportation and accessibility

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barriers, it also highlights the need for digital accessibility and accommodating home work environments.

3. **Health and Safety Concerns:** PWDs, especially those with underlying health conditions, may have faced higher health risks during the pandemic, which could impact their decisions regarding work and job search.
5. **Government Support:** In response to the pandemic, governments in some countries introduced financial assistance programs that were available to PWDs, which helped mitigate some of the economic challenges.

The pandemic has increased awareness about the importance of diversity and inclusivity in the workplace. Many employers are actively seeking to improve their inclusive hiring practices and are more open to hiring PWDs. Also, the increased reliance on digital technology during the pandemic has highlighted the importance of digital accessibility. Many employers and organizations have recognized the need to make their websites, software, and digital communication platforms more accessible to accommodate PWDs. To fully realize the potential of a disability-inclusive labour market in the post-pandemic world, it's crucial to continue promoting accessibility, inclusivity, and accommodations in the workplace. Employers should invest in accessible workplaces, and governments and advocacy organizations should support policies and initiatives that promote inclusivity and equal opportunities for PWDs in the labor market. The lessons learned during the pandemic regarding remote work, digital accessibility, and inclusive practices can be valuable for building a more inclusive labour market for PWDs in the future.

Digital divide impact

The digital divide refers to the gap between those who have access to modern information and communication technology (ICT) and those who do not. This divide can be influenced by various factors, including socio-economic status, geographical location, education, and, importantly, disability. When it comes to persons with disabilities (PWDs), the digital divide can manifest in several ways, creating barriers to access and participation in the digital world. Here are some key aspects of the digital divide concerning PWDs:

1. **Limited Access to Assistive Technology/ Economic Barriers:** Many PWDs rely on assistive technologies to access digital content. However, these technologies can be expensive and may not be readily available to everyone who needs them. Affordability of internet services, devices, and assistive technologies can be a significant barrier for individuals with disabilities who may face additional costs related to their disability.
2. **Inaccessible Websites and Online Platforms:** Websites and online platforms that are not designed with accessibility in mind can be challenging for PWDs to navigate. This includes issues such as lack of alternative text for images, insufficient keyboard navigation options, and poor color contrast.
3. **Limited Digital Literacy:** PWDs may face challenges in acquiring digital literacy skills, either due to a lack of training opportunities or because training programs are not adapted to their specific needs.
4. **Lack of Inclusive Design:** Digital products and services are not always designed with inclusivity in mind. Failure of following universal inclusive design principles in software and applications can exclude PWDs from fully participating in digital activities.

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5. **Access to Online Education and Employment Opportunities:** PWDs may face challenges accessing online educational resources and participating in remote learning. Additionally, barriers to digital employment opportunities, such as online job platforms, can limit their access to the workforce.
6. **Social Isolation:** The digital divide can contribute to social isolation for PWDs who may rely on online platforms for social interactions, information, and community engagement. Lack of access can lead to exclusion from important aspects of social life.

In addition, some key aspects of the digital divide and its implications to equal access of PWDs in the open labour market include:

1. **Access to Technology:** PWDs may face challenges in accessing necessary technology, such as computers, smartphones, or assistive devices. Without access to these technologies, PWDs may struggle to search for job opportunities online, apply for positions, or participate in digital interviews and assessments.
2. **Digital Skills:** Some PWDs may lack the digital skills needed for various jobs that increasingly require proficiency in technology. Without adequate digital skills, PWDs may be excluded from certain job opportunities or face barriers in career advancement.
3. **Online Job Applications:** Many job applications are now conducted online, requiring individuals to submit resumes, cover letters, and other documents electronically. PWDs without digital literacy or access to assistive technologies may find it challenging to complete online applications, limiting their participation in the labor market.
4. **Remote Work Opportunities:** The rise of remote work has become more prevalent, requiring reliable internet access and digital communication tools. PWDs without access to high-speed internet or appropriate technology may be excluded from remote work opportunities and digital communication in the workplace, further limiting their employment participation.
5. **Online Training and Education:** Continuous learning and professional development often occur through online platforms. PWDs without access to these platforms may miss out on opportunities for skill development and training, hindering their ability to compete in the job market.

To address the digital divide and its implications for PWDs in the labour market, it is essential to ensure affordable access to technology and training programs, establish accessible job application processes, and promote policies and programs that bridge the digital divide and promote equal opportunities for PWDs in education and employment.

1.3 Inclusive labour market prospects for PWDs

Work opportunities for PWDs in public administration

Work opportunities for persons with disabilities (PWDs) in the public sector are essential for promoting inclusivity and ensuring that government institutions reflect the diversity of the population they serve. Many government agencies are committed to diversity and inclusion, including the employment of PWDs. Job opportunities may include positions in administration, human resources, public service, and program management. Public sector jobs often offer stable employment, good benefits, and a

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commitment to equal employment opportunities. Here are some work opportunities for PWDs in the public sector:

1. **Civil Service Positions:** PWDs can pursue careers in civil service, which encompasses a wide range of roles in government agencies at the federal, state, and local levels. This includes administrative positions, clerical roles, and various administrative support jobs.
2. **Public Administration and Policy Roles:** Many PWDs have the skills and qualifications to work in public administration, policy development, and public management. These roles involve shaping government policies, programs, and services.
3. **Education and Special Education:** PWDs with a background in education can work as special education teachers, speech therapists, occupational therapists, or in other educational support roles within public schools.
4. **Healthcare and Rehabilitation:** Public sector healthcare facilities, including public hospitals and clinics, offer job opportunities for PWDs in various roles, such as nurses, therapists, counselors, and healthcare administrators.
5. **Research and Data Analysis:** Public sector organizations often conduct research and data analysis to inform policies and decisions. PWDs with research, data analysis, or statistical skills can find opportunities in these roles.
6. **Public Safety:** PWDs can pursue careers in public safety, including roles in law enforcement, fire departments, emergency management, and disaster response.
7. **Social Services:** Public agencies and departments dedicated to social services, such as disability services, child welfare, and family support, offer opportunities for PWDs to work in case management, counseling, and program coordination.
8. **Transportation and Infrastructure:** PWDs with skills in civil engineering, urban planning, and transportation management can find work in the development and maintenance of transportation systems and infrastructure projects in the public sector.
9. **Legal and Advocacy:** The public sector offers various legal and advocacy positions related to disability rights, civil rights, and legal support services.
10. **Information Technology (IT):** Public sector organizations often have a need for IT professionals, including web developers, database administrators, and cybersecurity specialists, to maintain digital infrastructure and services. Many of these roles can be performed remotely.
11. **Public Communications and Outreach:** PWDs with strong communication skills can work in public relations, community outreach, and public engagement roles to help government agencies communicate with the public and provide accessible information.
12. **Environmental and Conservation Positions:** Opportunities exist for PWDs in public sector roles focused on environmental conservation, park management, and wildlife protection.
13. **Customer Service and Support:** Many government agencies have customer service departments that offer positions suitable for PWDs who excel in interpersonal communication and assistance.
14. **Policy Implementation and Program Management:** Public sector agencies often require program managers and implementation specialists to oversee and administer government programs.
15. **Administrative and Support Positions:** A wide range of administrative and support roles, from administrative assistants to office managers, are available in government agencies.

To increase work opportunities for PWDs in the public sector, government agencies should actively recruit and promote inclusive hiring practices. Providing reasonable accommodations, offering flexible work arrangements, and promoting a supportive work culture are essential to ensure that PWDs can

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thrive in these positions. Additionally, agencies should engage with disability advocacy organizations and community outreach efforts to expand their pool of potential candidates and create a more inclusive workforce.

Social Economy and work prospects for PWDs

The social economy, which includes non-profit organizations, cooperatives, social enterprises, and other community-focused entities, share the objective of systematically putting people first, producing a positive impact on local communities and pursuing a social cause. Social economy organizations represent a significant 6 to 8% of GDP across 27 European Union [3]. There are 2.8 million social economy enterprises, representing 10% of all businesses in the EU. Almost 13.6 million people – about 6.2% of the EU's employees – work for social economy enterprises. On top of the paid workforce, social economy mobilises volunteers, equivalent to 5.5 million full-time workers[4]. Notably, these organizations have made a profound commitment to facilitating the labor market inclusion of individuals with disabilities, with some countries exhibiting a relevant record of employing up to three times more disabled workers than traditional enterprises. Social economy organizations prioritize people and implement internal adaptability to preserve employment opportunities and sustain socio-economic activities. On a daily basis, PWDs encounter a multitude of obstacles in accessing essential services, transportation, education, training, and job opportunities. Yet, a standout success story in supporting, training, and employing individuals with disabilities lies within the domain of the social economy.

The social economy sector often emphasizes social and environmental impact over profit, making it an attractive and inclusive option for PWDs, as following:

1. **Social Enterprises and Inclusive Employment:** Social enterprises are businesses driven by social or environmental missions. Many social enterprises are committed to providing inclusive employment opportunities for PWDs. These businesses often prioritize diversity and may offer supportive work environments and flexible arrangements.
2. **Nonprofit Organizations:** Nonprofits often play a significant role in supporting PWDs. These organizations may offer a wide range of job opportunities, including administrative roles, program management, advocacy, and direct support services for individuals with disabilities.
3. **Cooperatives:** Worker cooperatives, where employees have an ownership stake in the business, can provide PWDs with not only job opportunities but also a say in the decision-making process. This form of business can promote inclusivity and equality in sectors such as agriculture, consumer goods, and financial services.
4. **Community Services:** Social economy entities are frequently involved in community-based services, such as healthcare, education, and social support. These services can generate job opportunities for PWDs, whether as service providers or administrative staff.
5. **Skills Development and Training:** Social economy organizations often offer skills development, training, and apprenticeship programs. These initiatives can help PWDs gain the skills needed to access broader work opportunities in various sectors.

[3] What future for the social economy? (europa.eu)
[4] Social economy in the EU (europa.eu)

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6. **Inclusive Work Environments:** The social economy sector tends to be more open to diverse hiring practices and fostering inclusive workplaces. PWDs may find greater acceptance and understanding in such environments.
7. **Participatory Leadership:** Some social economy entities operate with participatory leadership models, where all employees have a say in decision-making. This can create a more inclusive and collaborative work culture.
8. **Micro-Entrepreneurship:** PWDs can explore micro-entrepreneurship opportunities within the social economy sector. For example, they can start their own small social enterprises, offering products or services that align with their skills and passions.
9. **Disability Advocacy and Support Organizations:** Social economy organizations are often at the forefront of disability advocacy and support efforts. PWDs may find job prospects in organizations dedicated to improving the lives of persons with disabilities.
10. **Job Flexibility:** Many social economy positions may offer flexible work arrangements, allowing PWDs to manage their work in ways that accommodate their specific needs and circumstances.

Potential job roles for PWDs in the social economy sector may involve: social services such as counseling and social work, finance, sustainable business management, human resources, program administration fundraising and grant writing, marketing and communications for social enterprises, event planning, advocacy and community outreach, artisanal and craftwork etc.

Disability-inclusive businesses

Disability-inclusive businesses, also known as "inclusive employers," are organizations that prioritize creating an inclusive and accessible work environment, actively hiring, accommodating, and supporting persons with disabilities (PWDs) in their workforce. These businesses recognize the diverse talents and abilities of PWDs and offer a wide range of job opportunities. Here are some examples of disability-inclusive businesses and potential job roles for PWDs:

- **Technology Companies:** Tech companies often emphasize accessibility in their products and hire PWDs for roles in software development, quality assurance testing, user experience (UX) design, and technical support.
- **Retailers:** Inclusive retailers ensure their stores and websites are accessible, and they hire PWDs for various roles, including customer service, sales, inventory management, and visual merchandising.
- **Hospitality and Tourism:** The hospitality industry offers opportunities for PWDs in hotels, restaurants, and travel agencies. Job roles may include front desk staff, tour guides, chefs, and event planning.
- **Financial Institutions:** Banks and financial institutions employ PWDs in positions such as customer service, teller services, data entry, and financial analysis.
- **Healthcare Providers:** Healthcare facilities and service providers offer a wide range of positions, including nurses, medical assistants, receptionists, and healthcare administrators.
- **Transportation Services:** Transportation companies, such as airlines and public transit, offer roles in customer service, baggage handling, maintenance, and accessibility compliance.
- **Universities and Educational Institutions:** Inclusive universities and educational institutions employ PWDs as educators, researchers, administrative staff, and disability support specialists.

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- **Pharmaceutical and Healthcare Companies:** Companies in the pharmaceutical and healthcare sectors hire PWDs for various roles, including research, manufacturing, quality control, and administrative positions.
- **Legal Firms:** Law firms are increasingly recognizing the value of diverse perspectives. PWDs can work as legal professionals, legal assistants, and paralegals.
- **Media and Entertainment:** The media and entertainment industry offers job opportunities in areas such as journalism, broadcasting, video production, and content creation.
- **Disability Consulting Firms:** Businesses that provide disability consulting services hire PWDs as consultants, trainers, and accessibility experts.

Businesses targeting customers with disabilities

Businesses that target customers with disabilities play a crucial role in creating job opportunities for PWDs. These businesses focus on meeting the unique needs and preferences of PWDs and often employ individuals with disabilities. By actively participating in businesses that target customers with disabilities, PWDs can not only contribute to the growth and success of these enterprises but also help create more accessible and inclusive products and services for the broader community of PWDs.
Here are some examples of businesses and job opportunities in this field:

- **Accessible Technology Companies:** Businesses that develop and provide accessible technologies, such as screen readers, communication devices, and assistive apps, offer jobs in software development, technical support, and customer service.
- **Adaptive Clothing Brands:** Adaptive clothing brands design and sell clothing and footwear that are easy to put on and remove. These companies employ individuals with disabilities for roles in design, marketing, and sales.
- **Mobility and Assistive Device Retailers:** Businesses that sell mobility aids, wheelchairs, walkers, and assistive devices hire PWDs in customer service, sales, and equipment maintenance positions.
- **Accessible Transportation Services:** Companies providing accessible transportation services, such as wheelchair-accessible taxis, employ PWDs as drivers and support staff.
- **Sign Language Interpretation Agencies:** Sign language interpretation agencies employ deaf or hard-of-hearing individuals as interpreters, and they also offer opportunities in administrative roles.
- **Accessible Travel and Tourism Services:** Businesses specializing in accessible travel and tourism hire PWDs in roles such as travel agents, tour guides, and customer service.
- **Accessible Fitness and Wellness Centers:** Fitness centers that offer accessible equipment and tailored fitness programs hire PWDs as fitness trainers, nutritionists, and front desk staff.
- **Hearing Aid and Audiological Services:** Companies offering hearing aid solutions employ hearing-impaired individuals as audiologists, hearing aid specialists, and administrative staff.
- **Braille and Tactile Printing Services:** Businesses specializing in braille and tactile printing offer employment for visually impaired individuals in transcription, proofreading, and customer service roles.
- **Deaf-Owned Art and Craft Stores:** Deaf-owned art and craft supply stores provide job opportunities for deaf and hard-of-hearing artists and creators.

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- **Accessible Website Design and Consultation Services:** Companies that focus on making websites accessible to all users offer jobs for web developers, accessibility consultants, and quality assurance testers.
- **Medical and Assistive Technology Manufacturers:** Manufacturers of medical devices and assistive technology employ PWDs in research and development, manufacturing, and quality control positions.
- **Disability Advocacy and Consultation Firms:** Advocacy and consulting firms that specialize in disability issues hire individuals with disabilities as consultants, policy analysts, and trainers.
- **Accessible Hotel Chains:** Hotel chains that prioritize accessibility and offer accommodations for PWDs employ individuals with disabilities in various hotel staff roles.

Gig Economy

The gig economy, also known as the freelance or on-demand economy, has grown significantly in recent years and has transformed the way people work and earn income. The gig economy is a labour market characterized by short-term contracts or freelance work as opposed to permanent jobs. In the gig economy, individuals, often referred to as "gig workers" or "independent contractors," take on temporary, flexible jobs or tasks, typically facilitated by online platforms and mobile apps. These platforms connect workers with customers or clients seeking specific services or tasks. Examples of gig economy platforms include Uber and Lyft for ridesharing, Airbnb for short-term rentals, Upwork and Fiverr for freelance services, and DoorDash and Grubhub for food delivery. Gig workers engage in a wide range of activities, from driving for rideshare services to freelance writing, graphic design, delivery, and more. Gig workers have the flexibility to choose when and where they work. They can take on multiple gigs simultaneously and adapt their schedules to suit their needs. Gig workers are typically paid on a per-task or per-gig basis, and payment may be delivered quickly through digital payment systems. Many gig workers are classified as independent contractors, meaning they are not considered employees of the companies they work for. This classification has implications for taxes, benefits, and labor protections. The gig economy has had a significant impact on the job market, providing opportunities for income generation and entrepreneurship. The gig economy offers flexibility and income-earning opportunities but can lack job security, benefits, and labor protections. Gig workers often need to manage their own taxes, healthcare, and retirement planning. The classification of gig workers as independent contractors has led to debates about labor rights, minimum wage, and worker classification. Laws and regulations vary by region and are evolving to address these issues.

Gig economy jobs often allow for flexible work arrangements, which can be beneficial for PWDs who may require accommodations or have unpredictable health conditions. PWDs can choose when and how much they work. On the other hand, being a Gig worker can be challenging for PWDs. Gig workers typically lack traditional employment benefits, such as health insurance and retirement plans, which can be a concern for PWDs who rely on these benefits. Additionally, job security and income stability can be challenging in the gig economy. The gig economy offers various work prospects, providing opportunities for flexible and self-employment options that can accommodate diverse needs and abilities. Gig work often involves short-term or freelance engagements, allowing individuals to work on their terms.

Gig economy opportunities may include: Freelance Writing and Content Creation, Online Tutoring and Education, Graphic Design and Artwork, Administrative and Support services, Web Development and

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Design, Social Media Management, Delivery and Transportation Services, Marketplace Selling, Online Surveys and Market Research, App Testing and Usability Testing etc.

The gig economy offers a flexible and accessible way for PWDs to earn income, showcase their talents, and achieve financial independence. As technology continues to advance, gig work prospects for PWDs are likely to expand, providing more opportunities for diverse skill sets and abilities.

Entrepreneurship and Self-Employment

Entrepreneurship and self-employment offer PWDs a path to financial independence, flexibility, and empowerment. By starting their own businesses or working as self-employed individuals, PWDs can create opportunities that align with their abilities, preferences, and accessibility needs. In order to engage in self-employment PWDs should explore various funding options, including personal savings, loans, grants, and crowdfunding. There are grants and resources available specifically for PWD entrepreneurs. They should also familiarize with disability rights and anti-discrimination laws that may apply to their business. While self-employment can provide PWDs with autonomy and flexibility, it can be financially risky, and self-employed individuals may lack the safety nets of traditional employment, making access to healthcare and retirement savings more challenging.

Some entrepreneurship and self-employment options for PWDs may include: Freelancing and Consulting, Online Retail and E-commerce, Content Creation and Blogging, Coaching and Personal Training, Accessibility Consulting, Artisanal and Craft Businesses, Online Education and E-learning, App and Software Development, Event Planning, Pet Care Services, Maintenance services for bicycles, wheelchairs, and mobility aids, Home-Based Catering or Baking, Accessible Tourism and Travel Planning, Woodworking and Carpentry, Life Coaching and Counseling etc.

When pursuing entrepreneurship or self-employment PWDs should consider factors such as accessible workspaces, assistive technology, and legal requirements. It's also essential to receive guidance for the development of a business plan, seek mentorship and support, and access relevant resources, grants, or programs designed to support PWD entrepreneurs.

Occupational sectors offering meaningful work prospects for PWDs

Work prospects for PWDs can vary depending on factors such as the type and severity of the disability, their skills and qualifications, as well as the level of support and accommodations available. While PWDs face unique challenges in the job market, there are numerous occupational sectors and industries where they can find meaningful employment opportunities. It's essential for PWDs to explore opportunities in sectors that align with their skills, interests, and career goals. Additionally, they should be aware of their rights and seek out supportive resources and organizations that can assist with job placement, accommodations, and career development. Employers are increasingly recognizing the benefits of a diverse and inclusive workforce and are more willing to accommodate the needs of PWDs.

Customer service industry

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The customer care sector, also known as the customer service industry, plays a critical role in ensuring positive interactions and experiences between a business or organization and its customers. Customer care encompasses a wide range of services and activities that aim to address customer inquiries, resolve issues, and provide support. Customer care services involve task and responsibilities related to handing inquiries and Information, complaint resolution and ensuring customer satisfaction, provision of technical support to customers, order management, billing and payments, gathering and analyzing customer feedback to improve products, services, and the customer experience. It also refers to customer retention, accommodating diverse communication needs and preferences, maintain multichannel support and follow-up communication, using modern means such as email, chat, social media, and self-service options on websites and mobile apps. A key aspect of the customer care sector refers to prioritize accessibility, inclusivity and diversity, by increasingly recognizing the importance of providing accessible and inclusive support to customers with disabilities, as well as acknowledging the value that PWDs bring to the workforce. This includes accommodating diverse communication needs and preferences. By fostering an inclusive work environment, customer care organizations can benefit from the unique talents and perspectives that PWDs offer while providing excellent service to a broader customer base.

In this scope, PWDs can excel in various roles within the customer care sector, contributing to exceptional customer service while benefiting from accessible and accommodating work environments. Some key customer care roles may include: remote customer care (call centers, chat support etc.), sales support, account management, and client relations, technical support services, accessibility and Inclusivity consulting, disability services coordination etc.

Arts and recreation

Arts and recreation offer a wide range of career options for individuals with disabilities (PWDs). In these fields, creativity and passion can often be more important than physical abilities, making them inclusive and accommodating for PWDs. Some options within arts and recreation may include careers in Visual Arts, Performing Arts, Writing and Literature, Photography, Film and Media, Graphic Design and Illustration, Crafts and Handmade Products, and Recreation and Sports. Many roles in these fields do not require physical prowess and can be adapted to various abilities. Adaptive instruments and assistive technology are available for individuals with physical disabilities to perform as musicians, authors, journalists, librarians and arts administrators, managing and organizing arts and cultural events, venues, and programs. In the field of Recreation and Sports, a PWD can work as Adaptive Sports Coach or Instructor, providing coaching for adaptive sports like wheelchair basketball, wheelchair tennis, or para-athletics. Also, as a Therapeutic Recreation Specialist, planning and leading recreational activities for individuals with disabilities to promote physical and emotional well-being.

Health and social care

A career in health and social care is highly rewarding and offers various opportunities for persons with disabilities (PWDs). Many roles within this sector focus on providing care, support, and assistance to individuals in need, and PWDs can engage in these roles with the right accommodations and support. PWDs have a strong understanding of physical challenges and can connect with patients on a personal level, bringing empathy and firsthand experience as well as valuable insights into overcoming challenges. to health and social care job roles. Available career options for PWDs in health and social care may

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involve administrative roles and positions, such as Medical Assistants, helping with administrative and clinical tasks in medical offices and clinics, assisting with patient check-in, record-keeping, and taking vital signs, medical transcriptions, medical billing and coding. Also, PWDs may work as caregivers, personal support workers or home health aides, providing personal care and support to individuals, including the elderly and individuals with disabilities, who need assistance with activities of daily living, such as bathing, dressing, meal preparation, light housekeeping and companionship. Other options include social work, occupational therapy, speech therapy, disability advocacy etc.

Education

A career in education offers a wide range of opportunities for individuals with disabilities (PWDs). Inclusive education is important, and many educational institutions are committed to providing equal opportunities for all educators and students. PWDs can be powerful advocates and role models for their students. PWDs can also excel in leadership and administrative positions and promote inclusion and accessibility. PWDs can provide valuable insights and recommendations for inclusive practices. PWDs in education may also work as special education teachers, school counselors, and education consultants, offering expertise and guidance on curriculum development, special education programs etc. PWDs with visual impairments can become braille transcribers, producing materials in braille to support students with visual disabilities. Individuals with hearing impairments can become sign language interpreters, facilitating communication between deaf or hard of hearing students and educators. PWDs can also pursue careers as online educators or instructors, delivering content and instruction through virtual platforms. PWDs with advanced degrees can pursue careers as college or university professors, teaching and conducting research in their areas of expertise.

Manufacturing

PWDs can pursue a wide range of career options in the manufacturing industry, just like individuals without disabilities. Some career options for PWDs in manufacturing. Many manufacturing companies are committed to diversity and inclusion and provide accommodations to ensure that individuals with disabilities can thrive in the workplace. There are a number of career options for PWDs in manufacturing. Many of these job roles are primarily desk-based, can be adapted to accommodate PWDs with various disabilities. Manufacturing and production jobs, such as packaging and assembly, can often be adapted for individuals with physical disabilities. PWDs can pursue a career as:

- Quality Control Inspectors, examining products to ensure they meet specifications and quality standards.
- Computer Numerical Control (CNC) machine operators, setting up and operate CNC machines to manufacture precision parts.
- Warehouse and Inventory Control specialists, managing inventory, organizing shipments, and tracking materials.
- Computer-Aided Design (CAD) designers and drafters, creating detailed technical drawings and blueprints for products and components.
- Materials Handlers and Assemblers, assembling products or handling materials.
- Engineering and Maintenance Technicians, to maintain equipment and troubleshoot technical issues.
- Supply Chain and Logistics Specialists, managing the movement of materials and products throughout the manufacturing process.

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Elementary occupations[5]

Elementary occupations represent a category of basic low-skilled roles, involving the performance of simple and routine tasks which may require the use of hand-held tools and considerable physical effort. While these roles often do not require extensive formal education, advanced skills or specialized training, they can be accessible to many PWDs, including those with sensory impairments, especially with the right accommodations and support in place. Jobs in retail, such as cashier, sales associate, or inventory management, can be accessible to many individuals with disabilities, including those with mobility impairments. Roles in the food industry, like kitchen staff, servers, or baristas, can also provide opportunities for PWDs. Roles in custodial services and maintenance, like janitors or groundskeepers, can be suitable for those with various disabilities. Many call center jobs offer remote work opportunities, making them accessible to individuals with disabilities, including those with mobility or sensory impairments. Indicative elementary occupations that may be suitable for PWDs include: Cleaner, Dishwasher, Kitchen Helper, Housekeeper, Laundry Worker, Packaging Assistant, Shelf Filler, Warehouse Worker, Gardener, Animal Caretaker, Parking Lot Attendant, Porter, Delivery Driver, Messenger, Crossing Guard, Car Washer, Recycling Worker, Farm Labourer.

Armed forces occupations

Many armed forces around the world have made efforts to be more inclusive and accommodating to PWDs. While some roles within the armed forces may have specific physical or medical requirements, there are opportunities for PWDs in various capacities, depending on their abilities and the policies of the specific armed force. Here are some armed forces occupations that may be open to PWDs in certain circumstances:

- Administrative and Clerical Positions: Many military branches have administrative and clerical roles that are office-based and can be suitable for individuals with various disabilities.
- Intelligence and Analysis: Roles in intelligence and analysis may involve working with data, technology, and research, making them accessible to some PWDs.
- Cybersecurity and Information Technology: The armed forces often require personnel with IT and cybersecurity expertise, which can be a good fit for those with disabilities in this field.
- Legal and Paralegal Roles: Legal positions in the military, such as legal officers or paralegals, can be accessible to individuals with disabilities who have a background in law.
- Medical and Healthcare Roles: The military has a significant need for healthcare professionals, including doctors, nurses, and medical technicians, which can be a good fit for PWDs in the healthcare sector.
- Communications and Public Affairs: Roles in communications, public affairs, and public relations may involve tasks that can be performed by individuals with disabilities.

[5] According to The ESCO Classification Occupations. ESCO (European Skills, Competences, Qualifications and Occupations) is a classification system used to describe and categorize skills, competences, qualifications, and occupations across Europe. It can be a useful resource for understanding and identifying suitable occupations for people with disabilities (PWDs). https://esco.ec.europa.eu/en

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- Logistics and Supply Chain: Managing logistics, transportation, and supply chains is critical in the armed forces, and these roles may be suitable for individuals with certain disabilities.
- Education and Training: The military often has roles for educators and trainers to help with the training and development of personnel.
- Research and Development: Opportunities for individuals with disabilities may exist in research and development roles related to technology, equipment, and other military innovations.

It's essential to note that the availability of specific roles for PWDs may vary depending on the country and the policies of the armed forces in question. Some armed forces have made significant efforts to accommodate individuals with disabilities, while others may have more stringent physical or medical requirements for certain roles.

2. Selected Job descriptions

Creating inclusive and accessible opportunities for individuals with disabilities in the ever-changing labour market is crucial for fostering diversity and ensuring equal access to employment. A desk research, a thorough literature review and a field survey on new emerging occupations conducted across LMI4DiS_ABLED partners' countries have showcased a selection of emerging occupations that may be equally deemed appropriate accessible for individuals with any kind of disability. This work has identified new career options, occupations and tasks accessible to persons with disabilities, providing the basis for the content of the LMI report/guide.

In this scope, a selection of twenty (20) occupations and relevant job descriptions is presented as part of the Adapted LMI and Career Information Guide, to provide accessible opportunities for PWDs. Job descriptions follow a standardized format, briefly analysing labour market data for a specific occupation and summarize the relevant essential responsibilities, activities, qualifications and skills. The main duties of the occupations, and employment requirements as prerequisites generally needed to enter each occupation will be described, including type and level of education, training, apprenticeship, on-the-job, or internal training, licenses, certificates and other requirements required, as well as disability inclusive arrangements.

Table 1. List of 20 LMI4DiS_ABLED Job Descriptions

1. Administrative Officer	1. Information Security Engineer
2. Artificial Intelligence Engineer	2. IT application expert/specialist
3. Career Counselor	3. Medical Equipment Technician
4. Customer Service Provider	4. Online educator
5. E-commerce specialist	5. Personal Assistant

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6. Farm Worker and Gardener	6. Social Media Manager
7. Food Preparation Helper	7. Software developer
8. Fundraising Consultant	8. Specialist in Renewable or Alternative Energy
9. Handcraft and 3D Printing Worker	9. Waiter/Waitress
10. Hotel and Resort Clerks	10. Web designer

These occupations not only offer diverse opportunities but also have the potential to be adapted to accommodate the needs of individuals with different types of disabilities, promoting inclusivity in the workforce. It's important for employers to embrace accessibility practices and provide reasonable accommodations to ensure equal opportunities for all. Creating an inclusive and accessible work environment is an ongoing process that requires commitment, education, and collaboration across all levels of an organization. By integrating these strategies, businesses can contribute to a more diverse, equitable, and inclusive labor market for individuals with disabilities. To promote opportunities in inclusive work roles, the following actions are important:

- Collaboration with Disability Employment Services and organizations that specialize in connecting PWDs with employment opportunities.
- Provision of training on accessibility issues for staff to ensure they are aware of and can accommodate various disabilities effectively.
- Development of Workplace Inclusivity Policies that support diversity and inclusion in the workplace.

It's important to recognize that individuals with disabilities are a diverse group with unique strengths and abilities. Inclusivity in the workplace involves understanding and accommodating these differences. Employers can work with PWDs to identify specific needs and make reasonable accommodations to ensure success in different work roles and occupational tasks.

By creating a supportive and inclusive work environment across sectors and occupations, a number of fulfilling and meaningful work opportunities for PWDs can be offered, fostering a culture of diversity and equality in the workforce.

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Administrative Officer

Related occupations

Administrative Assistant (Admin Assistant), Administrative Secretary (Admin Secretary), Administrative Specialist (Admin Specialist), Administrative Support Assistant (ASA), Office Assistant, Administrative Office Worker, Administrative Office Assistant, Secretary.

Working Conditions

ADMINISTRATIVE ASSISTANTs provide administrative and clerical support to organizations, departments, or individuals within a workplace. They can be found across all industries including schools, healthcare, education, technical services, government, and private corporations. They primarily work in office settings, although they may also work remotely in some cases, especially with the rise of telecommuting and flexible work arrangements. Office environments are typically equipped with standard office equipment such as computers, phones, printers, and filing systems. They usually work standard office hours, which are typically Monday to Friday during regular business hours. However, some positions may require occasional overtime or evening/weekend work to meet project deadlines or accommodate special events. While the work of Administrative Assistants is predominantly sedentary, it may involve some physical demands such as prolonged sitting, typing, and using computer equipment for extended periods.

Responsibilities, knowledge, competences and skills, expected results

Core Activities and Tasks:
Administrative Officers core activities and tasks include managing office procedures and systems, such as word processing, file management, and documentation, as well as handling correspondence and communication. Their duties, including answering phones, managing correspondence, scheduling appointments, organizing meetings, maintaining files and records, drafting documents and reports, handling incoming and outgoing mail, and assisting with various administrative tasks as needed. They often compose, type, and distribute meeting notes, routine correspondence, or reports, such as presentations or expense, statistical, or monthly reports. Overall, their role is crucial in maintaining organizational efficiency, efficient workflow and supporting the day-to-day functioning of the business.

Knowledge, Competences and Skills
Administrative Officers require a diverse set of knowledge, competences, and skills to effectively fulfill their roles. They should possess a thorough understanding of administrative procedures and systems, including proficiency in word processing, file management, and office software applications. English language proficiency, and adeptness with computers and electronics, along with a strong understanding of business management practices are essential. Strong communication skills are essential for effectively liaising with colleagues, clients, and stakeholders, while attention to detail and organizational abilities ensure accuracy and efficiency in managing documentation and correspondence. Additionally, Administrative Officers should demonstrate competence in time management and multitasking to handle various tasks simultaneously and meet deadlines effectively. Adaptability and problem-solving skills are valuable for addressing unexpected challenges and finding solutions to operational issues.

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Work prospects and opportunities for PWDs

Administrative officers play essential roles in various organizations, and individuals with different types of disabilities can pursue successful careers in administrative positions. PWDs, having the relevant skills required, can equally engage in tasks such as data entry, data management, data analysis and documentation, report generation, scheduling, communication, financial recordkeeping, office management, coordination and organization and functions. They can also contribute to project management, event planning, and customer service. Employers need to provide reasonable accommodations to PWDs, including specialized software, sign language interpreters, or flexible schedules. Assistive technologies such as screen readers, speech recognition software, and adaptive keyboards help PWDs access computers, read documents, and perform tasks required for administrative roles. Accessible workspaces ensure that office layouts, furniture, and equipment are suitable for employees with various disabilities. This might include wheelchair ramps, adjustable desks, and ergonomic chairs. Flexible work hours or remote work options can accommodate PWDs who may have medical appointments or require specific routines due to their disabilities. Remote work can also eliminate transportation barriers.

Formal education (by country)

Greece	Education and training requirements for administrative officers include a minimum of a high school diploma (NQF Level 4 and EQF Level 4) or a vocational school (EPAS) certificate in the specialty “administrative officers” (NQF Level 4 and EQF Level 4) or a vocational upper secondary school (EPAL) degree in the specialty “administrative and financial officer” (NQF Level 4 and EQF Level 4). However, many employers require a vocational training diploma (post-secondary level) in the specialty “management and finance executive” (NQF Level 5 and EQF Level 5) or a bachelor’s degree (NQF Level 6 and EQF Level 6), preferably in business, public administration or a related field. Professional certification in office management is also a plus. Recommended educational paths include: Bachelor's degree in business administration University of Patras University of Western Attica University of Thesally Athens University of Economics and Business International Hellenic University University of the Aegean University of Piraeus

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	Management and finance executive Vocational Training Institutes (IEK) https://education.gr/lista-dimosia-iek/ Administrative officers Vocational Schools (EPAS) https://www.dypa.gov.gr/ypallhlon-diikhtikon-kathhkonton Administrative and financial officer Vocational upper secondary school (EPAL) https://www.esos.gr/sites/default/files/articles-2023/fek-2023-tefxos_b-04040-downloaded_-23_06_2023.pdf
Italy	In Italy, to work as an Administrative Officer, the required level of education and training varies depending on the company and the specific role. However, in general, it is common to require at least a high school diploma (NQF and EQF level 4): ● Diploma di Istruzione Secondaria Superiore - Indirizzo Economico-Sociale (ES) ● Diploma di Istruzione Secondaria Superiore - Indirizzo Amministrazione, Finanza e Marketing (AFM) Some administrative positions may require specific skills in the field. In this case, it may be useful to take professional or technical courses that offer specific training in the administrative domain. If aspiring to more complex or responsible administrative roles, obtaining a University degree in disciplines such as Economics, Law, Political Science, or similar fields could be beneficial. A degree can open up more advanced and specialized career opportunities. Below some of the options available: ● Bachelor's Degree in Economics (Laurea Triennale in Scienze dell'Economia) - Classe L-33, NQF Level: 6, EQF Level: 6. ● Bachelor's Degree in Law (Laurea Triennale in Giurisprudenza) - Classe L-14, NQF Level: 6, EQF Level: 6. ● Bachelor's Degree in Political Science and International Relations (Laurea Triennale in Scienze Politiche e delle Relazioni Internazionali) - Classe L-36, NQF Level: 6, EQF Level: 6. ● Master's Degree in Business and Management (Laurea Magistrale in Economia e Gestione delle Aziende) - Classe LM-77, NQF Level: 7, EQF Level: 7.

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	• Master's Degree in Law (Laurea Magistrale in Giurisprudenza a ciclo unico) - Classe LMG-01, NQF Level: 7, EQF Level: 7. • Master's Degree in Political Science and International Relations (Laurea Magistrale in Scienze Politiche e delle Relazioni Internazionali) - Classe LM-62, NQF Level: 7, EQF Level: 7. Before choosing a path, it's advisable to check the specific details of the programs offered by individual universities. A useful website to do it is Universitaly.
Cyprus	Education and training requirements for administrative officers in Cyprus include a minimum of a high school diploma (CyQF/EQF Level 4) or a vocational school certificate in the specialty "office administration" (CyQF/EQF Level 4). However, many employers prefer a higher education diploma (CyQF/EQF Level 5) or a bachelor's degree (CyQF/EQF Level 6), preferably in business, public administration or a related field. Professional certification in office management is also an advantage. Recommended educational paths include: University of Nicosia (Link): Offers a BBA in Management and Finance, a four-year program covering business fundamentals and specialized management and finance knowledge. Accredited by CYQAA, it's at EQF level 6. European University Cyprus (Link): Provides an MBA in Management and Finance, a two-year program focusing on strategic and analytical skills for business leadership. Also accredited by CYQAA, corresponding to EQF level 7. Cyprus International Institute of Management (Link): Offers a DBA in Management and Finance, a three-year program for experienced professionals aiming to produce high-quality research. Accredited by CYQAA, it matches EQF level 8.
Portugal	In Portugal, becoming an administrative officer generally doesn't require extensive schooling or academic qualifications. However, some qualifications and formal education can be advantageous for getting a job in this field and progressing in this career. Here are the typical steps to becoming an administrative officer in Portugal: **1. Secondary Education**: goes up to the 12th grade (NQF Level 4 and EQF Level 4); the choice of subjects may depend on your preferences and future goals. **2. Vocational training**: Another option is to follow a vocational training path offered by various institutions in Portugal; These courses can vary in length and level of specialisation (NQF Level 5 and EQF Level 5). **3. Degree**: to progress in the administrative career and have opportunities for advancement, considering a degree (for example, in Administration, Management, or related fields (NQF Level 6 and EQF Level 6).

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	In Portugal, we can find several vocational schools and universities that offer courses in administrative areas. Below are some educational institutions that offer programmes related to administration: **Universities:** 1. **University of Lisbon (ULisboa) - https://www.ulisboa.pt/** : offers several courses related to administration, including courses at the Faculty of Economics, the Faculty of Social Sciences and Humanities and the Faculty of Psychology. 2. **University of Porto (UP) - https://www.up.pt/portal/pt/** : UP offers degree courses in areas such as Management, Economics and Communication Sciences, which can be related to administrative functions. 3. **University of Coimbra (UC) - https://www.uc.pt/** : UC offers courses in Economics, Management, Information Sciences and other areas that may be relevant to administrative careers. **Colleges and Polytechnics:** 1. **Lisbon Polytechnic (IPL) - https://www.ipl.pt/** : IPL has several colleges that offer technical and professional courses in administrative areas, such as the Escola Superior de Comunicação Social and the Escola Superior de Gestão. 2. **Porto Polytechnic (IPP) - https://www.ipp.pt/** : IPP offers degree courses in Management, Administration and other related areas. 3. **Setúbal Polytechnic (IPS) - https://www.ips.pt/ips_si/web_page.inicial** : offers undergraduate programmes in Public Administration and in areas related to management and administration. **Vocational Schools:** 1**. Lisbon Professional School of Digital Technology, IT and Administration (ETIC) - https://escoladigital.com/** : ETIC offers technical training programmes in areas such as Administration and Secretarial work. 2. **Vocational School Gustave Eiffel - https://gustaveeiffel.pt/** : This vocational school offers technical courses in Administration and Secretarial Studies. 3. **Professional School Bento de Jesus Caraça - https://epbjc.pt/** : this professional school offers technical and vocational courses in Administration.
Spain	In Spain, the training required to become an administrative is intermediate vocational training (EQF 4), higher vocational training (EQF 5) and even a university degree (EQF 6). Recommended educational path Medium grade formative cycle in Administrative Management

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	https://todofp.es/que-estudiar/loe/administracion-gestion/gestion-administrativa.html superior grade formative cycle in administration and finance https://todofp.es/que-estudiar/loe/administracion-gestion/administracion-finanzas.html Degree in Business Administration and Management https://yaq.es/carreras-universitarias/ciencias-sociales-y-juridicas/ade-administracion-y-direccion-empresas Degree in Economics https://yaq.es/carreras-universitarias/ciencias-sociales-y-juridicas/economia
Belgium	Find following an overview per study level of the basic training(s) considered to be a best match for this profession. However, there are often other options. Specific training may be legally required. The aim of academically oriented bachelor's courses is to prepare for a master's degree and therefore not directly for this profession. They are listed here to indicate the entry level of the course. HO - Graduate Accounting administration HO - Bachelor Business management: Accountancy-taxation *(Professional bachelor - HO)* Business management: Finance and insurance *(Professional bachelor - HO)* Business management: International entrepreneurship *(Professional bachelor - HO)* Business management: SME management *(Professional bachelor - HO)* Business management: Shop and retail management *(Professional bachelor - HO)* Business management: without specific specializations *(Professional bachelor - HO)* International business management : Global business (E) *(Professional bachelor - HO)* International business management : International Business and Trade (E) *(Professional bachelor - HO)* International business management (E) *(Professional bachelor - HO)* Network Economics *(Professional bachelor - HO)* Business Administration (E) *(Academic bachelor - HO)* Economic Sciences *(Academic bachelor - HO)* Commercial Engineer *(Academic bachelor - HO)* Commercial Sciences *(Academic bachelor - HO)* Applied economics: without specific specializations *(Academic bachelor - HO)* Applied economics: business administration *(Academic bachelor - HO)* HO - Master Accountancy and auditing *(Master - HO)* General economics *(Master - HO)* Applied economic sciences : Economic policy (E) *(Master - HO)* Business Economics: Business Economics *(Master - HO)* Business Economics: Taxation *(Master - HO)* Business Administration *(Master - HO)* Policy Economics *(Master - HO)*

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	Business Administration (E) *(Master - HO)* Economics (E) *(Master - HO)* Economics, law and business administration *(Master - HO)* Economic Sciences *(Master - HO)* VDAB training courses Find out if there is a training course on the VDAB website.

Career Progression

Experienced administrative officers may advance to roles with increased responsibility, such as office supervisors or managers, where they oversee broader aspects of office administration, coordinate projects, and manage teams of support staff. They can also act as executive assistants, providing administrative support to upper-level executives. With further experience and specialized skills, administrative assistants may pursue opportunities in areas like human resources, finance, or event planning, eventually reaching senior management or executive levels within organizations. They could also move into other departments, like IT, payroll or accounting. With further training, they could specialize in an area like legal, financial or medical administration.

Employment trends

Analyzing the online job advertisements for associate professionals collected from EU27 in 2022, administrative services has the second highest value with 23.7%. Future employment growth average in the administrative services sector across European countries in 2022-2035 is estimated at 8.2% (The minimum is -14.2% for Latvia, while the maximum is 31.8% for Luxembourg). The employment level of office associate professionals across sectors is expected to grow by 10 per cent between 2018 and 2030, with 'wholesale and retail trade', 'financial and insurance activities' and 'legal, accounting and consulting activities' being the key employers. Employment growth is also projected for medical secretaries, primarily due to the growth of the healthcare industry. The role of administrative officers faces a moderate risk of automation due to the increasing integration of digital technologies in administrative tasks. Automation technologies, such as advanced software applications and artificial intelligence (AI) systems, have the potential to streamline repetitive administrative processes, such as data entry, file management, and document processing.

Resources

General	O*NET OnLine. https://www.onetonline.org/link/summary/43-6014.00 U.S. Bureau of Labor Statistics. Occupational Outlook Handbook. https://www.bls.gov/ooh/office-and-administrative-support/secretaries-and-administrative-assistants.htm#tab-1 European Commission. ESCO. https://esco.ec.europa.eu/en/classification/occupation_main Association pf Executive and Administrative Professionals. AEAP. http://www.theaeap.com/ CEDEFOP. https://www.cedefop.europa.eu/en/data-insights/office-associate-professionals-skills-opportunities-and-challenges-2019-update

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	CEDEFOP. https://www.cedefop.europa.eu/en/tools/skills-intelligence/skills-online-job-advertisements?country=EU27_2020&year=2022&occupation=3#28 CEDEFOP. https://www.cedefop.europa.eu/en/tools/skills-intelligence/sectors?sector=05.13#3 National Careers Service. UK Government. https://nationalcareers.service.gov.uk/job-profiles/admin-assistant
Greece	GlobalCert https://www.globalcert.gr/EL/%CE%95%CE%A4%CE%91%CE%99%CE%A1%CE%95%CE%99%CE%91/GLOBALCERT-1.html Edujob http://edujob.gr/node/206
Italy	Associazione Italiana per l'Amministrazione Aziendale (AIDA) aidainsurance.org Formez formez.it Atlante delle professioni www.atlantedelleprofessioni.it
Cyprus	
Portugal	Portugal | CEDEFOP (europa.eu) Assistente Administrativo: O que faz, Curso e Como ser? (guiadasprofissoes.info)
Spain	National Association of Professional Administrative Technicians of Spain: https://anteproa.blogspot.com/
Belgium	CEDEFOP Belgium https://www.onderwijskiezer.be/v2/beroepen/beroep_detail.php?beroep=24 https://euroguidance.eu/guidance-systems-and-practice/national-guidance-systems/guidance-system-in-belgium-flanders https://competent.vdab.be/competent/release/current/occupationalprofile/OP-79?language=DUTCH

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Artificial Intelligence (AI) Engineer

Related occupations

AI system designer, Intelligent systems developer, Machine learning systems designer, Intelligent systems engineer, Intelligent systems designer, Artificial intelligence designer.

Working Conditions

An ARTIFICIAL INTELLIGENCE (AI) ENGINEER is a professional responsible for designing, developing, and implementing AI solutions and systems, combining computer science, data science, and machine learning, to create intelligent machines capable of performing tasks that typically require human intelligence. AI Engineers typically work in office settings, often in technology companies, research institutions, or corporate environments in diverse industries including healthcare, education, finance, manufacturing and transportation. They may also work remotely, especially in roles that involve a significant amount of programming and data analysis. In general, AI Engineers may work long hours, especially when deadlines are approaching or when troubleshooting complex issues. They may also experience pressure to deliver results within tight timelines, particularly in fast-paced industries such as tech startups or software development firms. Additionally, AI Engineers often collaborate with cross-functional teams, including data scientists, software developers, and domain experts.

Responsibilities, knowledge, competences and skills, expected results

Core Activities and Tasks:
AI Engineers are responsible for designing, developing, and implementing AI-based solutions to address complex problems and improve system performance. Their core activities include conducting research and analysis to understand business requirements and identify opportunities for AI integration, designing algorithms and models to solve specific problems, and programming and testing AI systems to ensure accuracy and reliability. They collaborate closely with cross-functional teams, including data scientists, software developers, and domain experts, to integrate AI capabilities into existing systems or develop new AI applications. Additionally, AI Engineers are involved in optimizing algorithms and models for performance, scalability, and efficiency, as well as staying updated on emerging technologies and best practices in the field of artificial intelligence.

Knowledge, Competences and Skills:
AI Engineers should possess a deep understanding of machine learning algorithms, neural networks, and other AI techniques, as well as proficiency in programming languages such as Python, Java, or C++. Strong mathematical and statistical skills enable them to analyze data, develop predictive models, and optimize algorithms for performance. Additionally, AI Engineers possess expertise in data preprocessing, feature engineering, and model evaluation to ensure the accuracy and reliability of AI systems. They demonstrate problem-solving abilities and creativity in designing innovative AI solutions to address complex challenges across various domains. Collaboration and communication skills are essential for working effectively with cross-functional teams and stakeholders, while continuous learning and adaptability enable them to stay updated of the latest developments and advancements in the rapidly evolving field of AI.

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Work prospects and opportunities for PWDs

PWDs with the relevant skills required can equally pursue careers as artificial intelligence (AI) engineers, engaging in various roles and tasks, including data collection, data analysis, natural language processing, visual data processing, algorithm development and model training, computer vision, or machine learning. They can also contribute to the development of AI systems that are more inclusive and user-friendly for persons with disabilities. Many AI engineering tasks can be performed remotely, making it accessible to PWDs who may have mobility or transportation limitations. Starting an AI-related business or working as a freelance AI engineer can be a flexible and inclusive path for PWDs. Reasonable accommodations for employees with disabilities may include assistive technologies, hardware and software (screen readers and speech recognition & coding software), flexible work schedules, ergonomic office setups, and accessible AI and programming resources to ensure equal access and opportunity.

Formal education (by country)

Greece	A formal education in computer science or a related field is typically required to become an Artificial Intelligence Engineer. While some positions may accept candidates with a high school diploma or an associate degree, most employers prefer candidates with at least a bachelor's degree. Here are some educational requirements and degree options for aspiring AI Engineers: Bachelor's Degree: Pursuing a bachelor's degree in computer science, software engineering, mathematics, or a related field provides a solid foundation for a career in AI. The coursework typically includes programming languages, algorithms, data structures, statistics, and machine learning. These qualifications are equivalent to NQF Level 6 and EQF Level 6 is required. Master's Degree: A master's degree in AI, computer science, or a specialized field like machine learning can enhance knowledge and skills in AI technologies. It can also provide opportunities for advanced research and specialization in specific AI applications. These qualifications are equivalent to NQF Level 7 and EQF Level 7. Recommended educational paths include: Bachelor's degree in Applied Computer Science. Fields of study: a) Applied Computer Science, b) Technology Management. Department of Applied Computer Science. School of Information Sciences. University of Macedonia. Bachelor's degree in Computer Engineering (T.E.). Department of Computer Engineering (T.E.). School of Technological Applications. Alexandrio Technological Educational Institute of Thessaloniki. Bachelor's degree in Computer Science and Telematics.

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	Department of Computer Science and Telematics. School of Digital Technology. Harokopio University. Bachelor's degree in Informatics. Department of Informatics. School of Sciences. University of Western Macedonia. Bachelor's degree in Computer Engineering Technological Education. Department of Computer Engineering of Technological Education. Technological Educational Institution of Central Greece Bachelor's degree in Digital Systems. Department of Digital Systems. School of Information and Communication Technologies. University of Piraeus. Bachelor's degree in Computer Engineering Technology, with Advanced Semester Directions: Network Engineering, Computer Engineering, Software Engineering. Department of Information Technology Engineering, School of Technological Applications. Technological Educational Institute of Crete. Bachelor's degree in Computer Engineering. Department of Computer and Information Engineering. School of Engineering. University of West Attica. Bachelor's degree in Computer Engineering and Informatics Department of Computer Engineering and Informatics. Faculty of Engineering University of Ioannina Bachelor's degree in Applied Mathematics School of Applied Mathematics and Natural Sciences. National Technical University of Athens MSc in "Artificial Intelligence" Department of Digital Systems of the School of Information and Communication Technologies of the University of Piraeus and the Institute of Informatics and Telecommunications of the National Research Centre for Computer Science and Technology "Demokritos" MSc in "Artificial Intelligence" Department of Informatics.

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	Aristotle University of Thessaloniki MSc in Artificial Intelligence and Data Analytics Department of Applied Informatics, Faculty of Information Sciences University of Macedonia
Italy	A formal education in Computer science or a related field is typically required to become an Artificial Intelligence Engineer. While some positions may accept candidates with a high school diploma, often combined with a professional training course in the field, most employers prefer candidates with at least a bachelor's degree. Below examples of university programs at the bachelor's and master's levels, along with their program codes: Bachelor's Degree (Laurea triennale, NQF Level: 6, EQF Level: 6): - Computer Science (Informatica) - Class L-31 - Artificial Intelligence (Intelligenza Artificiale) - Class L-31 Master's Degree (Laurea magistrale, NQF Level: 7, EQF Level: 7) - Artificial Intelligence (Intelligenza Artificiale) - Class LM-18 - Data Science and Engineering - Class LM-18 - Computer Engineering (Ingegneria Informatica) -Class LM-32 - Artificial Intelligence and Data Engineering - Class LM-32 Before choosing a program, it's advisable to check the specific details and curriculum of the programs offered by individual universities. A useful website to do it is Universitaly.
Cyprus	To become an Artificial Intelligence Engineer in Cyprus, one typically starts with a Bachelor's Degree in Computer Science from an institution like the European University Cyprus, covering essential areas such as AI, Cloud Computing, and Big Data (EQF Level 6). Advancing in this field often involves pursuing a Master's Degree in Computer Science, where students delve into more specialized topics like Machine Learning and Human-Computer Interaction (EQF Level 7). For those aiming for research or high-level industry roles, a Ph.D. in Computer Science can provide deep expertise and research skills (EQF Level 8). Recommended educational paths include: Master of Science in AI (Online) from European University Cyprus: An 18-month program focusing on AI theory and practice. It aligns with EQF level 7 (Program Details). Ph.D. in Computer Science from European University Cyprus: A 3-year doctoral program emphasizing research and critical thinking in computing, corresponding to EQF level 8 (Program Details).
Portugal	To become an engineer in the field of artificial intelligence in Portugal, it is needed to follow a specific school and academic path that involves obtaining a higher education degree (NQF Level 6 and EQF Level 6).

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	To pursue a career in artificial intelligence, it is generally recommended to choose a degree course in computer science, computer engineering or electronic and telecommunications engineering. Postgraduate programme (these qualifications are equivalent to NQF Level 7 and EQF Level 7): to further deepen the knowledge and skills in the field of artificial intelligence, taking a postgraduate course, such as a master's or doctorate, in machine learning, natural language processing, computer vision or related areas should be considered. Participation in Projects and Internships: look for internships in companies or research laboratories working in the field. This will provide practical experience and networking opportunities. Below are some options for relevant degree programmes at Portuguese universities: **1. Degree in Computer Science, Computer Engineering and in Electronic and Telecommunications Engineering** - University of Lisbon (e.g. Faculty of Science) - https://ciencias.ulisboa.pt/ -University of Porto (e.g. Faculty of Science) - https://sigarra.up.pt/fcup/pt/web_page.inicial - University of Coimbra (e.g. Faculty of Science and Technology) - https://www.uc.pt/fctuc/ **2. Master's Degree in Artificial Intelligence:** -University of Porto (Faculty of Engineering) - https://sigarra.up.pt/feup/pt/web_page.inicial - University of Lisbon (Instituto Superior Técnico) - https://tecnico.ulisboa.pt/pt/ -University of Coimbra (Faculty of Science and Technology) - https://www.uc.pt/fctuc/ **3. Master's Degree in Data Science and Complex Systems:** - University of Lisbon (Faculty of Sciences) - https://ciencias.ulisboa.pt/ **4.Master's Degree in Computer Engineering with an emphasis on Artificial Intelligence:** - University of Minho (School of Engineering) - https://www.eng.uminho.pt/pt **5. Master's Degree in Information Systems and Artificial Intelligence**: - University of Évora (School of Science and Technology) - https://www.ect.uevora.pt/ **6. Master's Degree in Data Science and Advanced Analytics**: - University of Lisbon (Nova School of Business and Economics) - https://www.novasbe.unl.pt/pt/ - University of Aveiro - https://www.ua.pt/
Spain	The educational level required to become an artificial intelligence engineer is generally at EQF level 7 or higher of the European Qualifications Framework for Lifelong Learning (EQF).

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	An artificial intelligence engineer needs advanced and specialized training in fields such as computer science, data science, artificial intelligence and machine learning. Recommended educational path Bachelor's Degree in Computer Engineering or Computer Science https://yaq.es/carreras-universitarias/ingenieria-y-arquitectura/ingenieria-informatica Master's Degree in Artificial Intelligence or Machine Learning https://vanessacmx.com/donde-estudiar-inteligencia-artificial-en-espana/
Belgium	In Flanders, Belgium, the postgraduate programme on AI in Business and Industry aims to give engineers, computer scientists and other professionals the opportunity to specialise in the field of artificial intelligence. This programme allows professionals to acquire in one year a solid academic knowledge of AI, as well as insight into the domains of image and language (computer vision/NLP) and business aspects of AI. The programme starts with the theoretical AI foundations that are indispensable for professionals. The programme runs for the duration of a full academic year. Here are examples of the relevant educational programmes for this specific position: Applied Computer Sciences Creative Technologies and Artificial Intelligence Applied Computer Science – AI Intelligence

Career Progression

Experienced AI Engineers may advance to roles with increased complexity and responsibility, such as machine learning engineer or data scientist, where they design and develop AI algorithms, conduct experiments, and optimize models for specific applications. With further experience and expertise, AI engineers may specialize in areas like natural language processing, computer vision, deep learning or reinforcement learning, assuming roles such as AI researcher or AI architect, where they lead research initiatives, design innovative AI solutions, and contribute to the development of cutting-edge technologies. The field of AI is rapidly evolving. It is important to stay updated with the latest research papers, technologies, and tools through online courses, conferences, and workshops.

Employment trends

AI engineering is a rapidly growing and in-demand career field with a promising future. Future employment growth average in the ICT services sector across European countries in 2022-2035 is estimated at 24.6% (The minimum is -9.8% for Germany, while the maximum is 57.7% for Estonia). Companies and organizations struggle to find experts in artificial intelligence, data, cybersecurity or blockchain. This is blocking the digital transformation of the European economy and hampering its competitiveness. The Digital Decade strategy aims to reach at least 20 million employed ICT specialists in Europe by 2030. Also by 2030, AI could contribute up to $15.7 trillion to the global economy, according to PricewaterhouseCoopers' Global Artificial Intelligence Study. This projected growth means organizations are turning to AI to help power their business decisions and increase efficiency. For an AI engineer, that means plenty of growth potential and a healthy salary to match.

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Resources (by country)

General	European Commission (2021). *Leveraging Artificial Intelligence to update the ESCO Occupations Pillar.* Report May 2021. Brookings Institution (2018). *How artificial intelligence is transforming the world,* https://www.brookings.edu/research/how-artificial-intelligence-is-transforming-the-world/ Pricewaterhouse Coopers. *"Sizing the prize: What's the real value of AI for your business and how can you apitalize?".* https://www.pwc.com/gx/en/issues/analytics/assets/pwc-ai-analysis-sizing-the-prize-report.pdf.". O*NET OnLine. https://www.onetonline.org/link/summary/33-3021.06 CEDEFOP. *National Qualifications frameworks (NQFs) online tool.* https://www.cedefop.europa.eu/en/tools/nqfs-online-tool/countries/greece-2020 CEDEFOP https://www.cedefop.europa.eu/en/tools/skills-intelligence/sectors?sector=05.10#1 EOPPEP (2016). *Greece – EQF Referencing Report.* https://europa.eu/europass/system/files/2022-05/Greek_Referencing_Report%5B1%5D.pdf European Union https://digital-skills-jobs.europa.eu/en/latest/events/towards-20-million-ict-specialists-2030-how-europe-training-its-digital-experts
Greece	Greek Informatics Association https://www.epe.org.gr/ Panhellenic Association of Computer Scientists (P.S.P.) https://www.pde.gr/index.php?topic=8780.0
Italy	AIIA – Associazione Italiana per l'Intelligenza Artificiale aixia.it Digitalic digitalic.it AI4Business ai4business.it Intelligenza Artificiale intelligenzaartificiale.it
Cyprus	Cyprus Tech Association: A platform for tech professionals and ICT companies in Cyprus, focusing on technologies including AI. Website

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	Cyprus Information Technology Enterprises Association (CITEA): Represents ICT companies in Cyprus, fostering the development of ICT and AI technologies. Website
Portugal	FCUP – Licenciatura em Inteligência Artificial e Ciência de Dados Engenheiro IA – Inteligência Artificial – Sabe tudo da profissão aqui (guiadasprofissoes.info)
Spain	GiGroup (s.f.) El impacto de la IA en el mercado laboral español. https://www.gigroupholding.com/espana/informe-inteligencia-artificial/ Instituto de la Ingeniería en España (2021) Implantación de la inteligencia artificial en España. https://www.iies.es/single-post/implantaci%C3%B3n-de-la-inteligencia-artificial-en-espa%C3%B1a
Belgium	AI Studies in Belgium CEDEFOP Belgium https://www.studyinflanders.be/programmes/p20

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Career Counselor

Related occupations

Guidance counselor, Career advisor, Vocational counselor, Career coach[6], Career guidance practitioner, Career practitioner

Working Conditions

CAREER COUNSELORS work with individuals at all levels of their career: students, alumni, mid-career professionals looking for a change, laid-off workers, unemployed and retired people. The workplace of a career counselor can vary depending on their employer and the specific services they offer. Some career counselors work in private practice, while others are employed by government agencies, schools, colleges, or corporations. Career counselors who work in private practice may have their own office or work from home, while those who work for larger organizations may have an office on-site or travel to different locations to provide counseling services. In general, career counselors work in office settings, ensuring confidentiality for their clients to discuss their career aspirations and concerns. Career counselors use various tools and resources such as aptitude tests, personality assessments, and career exploration software to assist clients in their career exploration process. They also use email, telephone, and video conferencing to provide distance counseling services. Additionally, career counselors may use social media platforms and online job boards to help clients identify job opportunities and stay informed about industry trends and job market changes. Some career counselors may work with clients on a one-on-one basis, while others may conduct group workshops or seminars. Career counselors may also work with clients who have disabilities or face barriers to employment, and they may collaborate with other professionals such as social workers, psychologists, and vocational rehabilitation specialists.

Responsibilities, knowledge, competences and skills, expected results

Core Activities and Tasks

Career counselors play a vital role in guiding individuals through various stages of their career development journey. Their core activities include conducting assessments to identify clients' interests, skills, and values, providing personalized career counseling and guidance based on individual needs and aspirations, and assisting clients in exploring career options and developing action plans to achieve their goals. They offer support in resume writing, job search strategies, and interview preparation, as well as helping clients navigate career transitions, such as job changes or re-entering the workforce. Additionally, career counselors study labor market trends, educational requirements, and industry-specific information to provide accurate and relevant advice to their clients. Their ultimate aim is to empower individuals to make informed decisions about their careers, maximize their potential, and achieve long-term professional fulfillment and success.

Knowledge, Competences and Skills

Career counselors should have a deep understanding of career theories, counseling techniques, and

[6] Career coaches work with people who have already entered the workforce. These counselors develop plans with customized objectives and activities to improve their clients' careers. They motivate their clients and support them to achieve the goals they set together. Career coaches also provide advice about entering a new occupation or helping to resolve workplace issues.

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assessment tools to help clients explore their interests, skills, and values, and identify suitable career paths. Strong communication and interpersonal skills enable them to establish rapport with clients, empathize with their concerns, and provide personalized guidance and support. Career counselors also possess expertise in resume writing, job search strategies, and interview preparation, along with knowledge of labour market trends, industry-specific information, and education/training opportunities pathways. Additionally, they should demonstrate intercultural competence, sensitivity to diversity, and ethical integrity in their practice, ensuring that they provide inclusive and equitable services to clients from diverse backgrounds.

Work prospects and opportunities for PWDs

PWDs can be highly effective career counselors, providing valuable support and guidance to diverse client groups at various stages of their career development. Their unique perspectives, experiences, and knowledge can enhance the quality of career counseling services and promote greater inclusivity and diversity in the workforce. In case they work as Vocational rehabilitation counsellors, serving individuals with disabilities their aim is to help them achieve independence, gain employment and maintain jobs that match their skills and interests. PWDs often have a deep understanding of disability rights and laws, which can be crucial when counselling clients on their legal rights, reasonable accommodations, and discrimination issues in the workplace. They might work in specialized educational institutions for PWDs or disability support organizations, to facilities PWDs' job placement and provide support in skill development, workplace social skills, and job search strategies. Depending the type of disability or skills level, it might help considering to engage in more administrative tasks, which are essential for maintaining an organized and efficient counselling practice or program, such as maintaining accurate and confidential records for each client, including assessment results, session notes, and any relevant documents, organizing and updating the career guidance resource library, including books, brochures, online resources, and assessment tools. Also, they can be involved in networking and communication with employers, referral services and other stakeholders and advocate for workplace accommodations. PWDs should have access to reasonable accommodations, such as accessible workplaces and assistive technology, flexible schedules or ergonomic adjustments, to ensure they can perform their job effectively. Utilizing assistive technologies, such as text-to-speech software and screen readers, as well as accessible communication tools for virtual counselling sessions are required to access digital materials, research, and communicate effectively with clients. PWDs can bring diversity to the field of career counselling, which can lead to a broader perspective on career choices, workplace inclusion, and accommodations. This diversity can help clients explore a wider range of career options and adapt to different workplace environments. PWDs can serve as inspirational role models for diverse clients, demonstrating that it is possible to have a successful and fulfilling career despite disability.

Formal education (by country)

Greece	The education needed to be a career counselor is a bachelor's degree in any field (NQF Level 6 and EQF Level 6) and i) a post-graduate degree in career counseling (NQF Level 7 and EQF Level 7) or ii) a training certificate compatible with the professional profile of the career counselor and successful participation in relevant examinations. These qualifications are equivalent to NQF Level 6 and EQF Level 6. Recommended educational paths include:

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	MSc in Counselling, Career Guidance and Lifelong Learning National and Kapodistrian University of Athens Specialization Program in Counselling and Guidance School of Pedagogical and Technological Education
Italy	Currently, as mentioned in the Inventory of lifelong guidance systems and practices - Italy (Cedefop, 2020), there are no formal and stable university programmes on career counseling. Most career practitioners have study backgrounds in psychology, economics and business administration, labour law and pedagogy, often combined with a professional training in Counseling. Despite University Degree is not formally required, here are examples of university programs at the bachelor's and master's levels, along with their program codes: Bachelor's Degree in Psychology (Laurea triennale in Psicologia) - Class L-24, NQF Level: 6, EQF Level: 6. Bachelor's Degree in Educational Sciences (Laurea triennale in Scienze dell'Educazione) - Class L-19, NQF Level: 6, EQF Level: 6 Master's Degree in Counseling Psychology (Laurea Magistrale in Psicologia Clinica – Class LM-51, NQF Level: 7, EQF Level: 7. Before choosing a program, it's advisable to check the specific details and curriculum of the programs offered by individual universities. A useful website to do it is Universitaly. At University level there are currently some Postgraduate Courses on lifelong guidance, such those offered by the University of Padova (Guidance and Career Counseling for Inclusion, Sustainability, and Social Justice), by the Cattolica University (Advanced Course in Career Counseling), as well as others provided by other Universities (i.e. LUMSA, Unipegaso) and institutions (i.e ASPIC). The above mentioned Postgraduate training programs do not specifically target career guidance services to PWDs. Currently, the only Postgraduate training program targeting PWDs is the Master for Disability Job Supporter delivered by eCampus University, a blended training path provided in collaboration with ANDEL (National Disability and Work Agency), a non-profit service agency. The Disability Job Supporter is a professional figure responsible of managing the entire work inclusion process of PWDs.
Cyprus	In Cyprus, for those interested in pursuing a career in career counseling or job counseling, there are a few educational options available, particularly at the European University Cyprus (EUC). Master's Degree in Career Counseling and Guidance: EUC offers an online Master of Arts in Career Counseling and Guidance. This interdisciplinary program is designed to equip students with knowledge and skills in career planning, professional and educational guidance, and career development and growth. Regarding the EQF levels, the Master's degree aligns with EQF level 7, indicating advanced skills and knowledge, typically leading to professional expertise or managing and designing complex work

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	Recommended educational paths include: https://euc.ac.cy/en/programs/master-career-counseling-and-guidance-online/
Portugal	In Portugal, to become a career counselor, one needs to hold a higher education degree (NQF Level 6 and EQF Level 6) in psychology, psycho-pedagogy, pedagogy, educational sciences, or related fields. Postgraduate Diploma in Vocational and Career Guidance is highly recommended but not mandatory. Although certification is not compulsory in Portugal, professional certifications in career guidance, such as the European Certification in Work and Organisational Psychology (EuroPsy) or other recognised credentials in the field can be relevant. **Universities**: 1. University of Lisbon (ULisboa) - https://www.ulisboa.pt/ 2. University of Porto (UP) - https://www.up.pt/portal/pt/ 3. University of Coimbra (UC) - https://www.uc.pt/ 4. University of Aveiro (UA) - https://www.ua.pt/ 5. NOVA University of Lisbon (NOVA) - https://www.unl.pt/ 6. University of Minho (UM) - https://www.uminho.pt/PT 7. University of Évora (UE) - https://www.uevora.pt/ **Polytechnic Institutes**: 1. Lisbon Polytechnic (IPL) - https://www.ipl.pt/ 2. Porto Polytechnic (IPP) - https://www.ipp.pt/ 3. Coimbra Polytechnic (IPC) - https://www.ipc.pt/ipc/ 4. Setúbal Polytechnic (IPS) - https://www.si.ips.pt/ips_si/web_page.inicial
Spain	In Spain, in order to become a career counselor, training at Master's level (EQF 7) or equivalent is generally required. Although there is no specific regulation at the national level for the profession of career counselor, the training and qualifications required vary according to the calls and requirements of the different public administrations and organizations. In many cases, career counselors have a background in psychology, pedagogy, social work, or related fields at the undergraduate level (EQF 6). However, to perform the role of career counselor, a Master's degree in Career Counseling or Human Resources is usually required, which is generally at EQF 7 level. Master's Degree in Career Counseling https://www.educaweb.com/estudio/titulacion-master-oficial-orientacion-profesional/

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Belgium	In Belgium to pursue a profession of Career Counsellor, one shall choose among these possible educational backgrounds (depending on the job requirements): **HO - Graduate** HR support Social work Social - cultural work Syndic (Union) work **HO - Bachelor's** Social work : Social Work *(Professional Bachelor's - HO)* Social work : Social advice *(Professional bachelor - HO)* Social work : Staff work *(Professional bachelor - HO)* Social work : Socio-cultural work *(Professional Bachelor - HO)* Social work : without specific specialisations *(Professional Bachelor - HO)* Applied psychology: Occupational and organizational psychology *(Professional bachelor - HO)* Applied psychology: School psychology and pedagogical psychology *(Professional bachelor - HO)* Applied psychology: without specific specialisations *(Professional Bachelor - HO)* Agogical *sciences (Academic bachelor - HO)* Educational Sciences *(Academic Bachelor's - HO)* Pedagogical sciences: Clinical Orthopaesis and Disability Studies *(Academic Bachelor - HO)* Pedagogical sciences: Educational and Educational Sciences *(Academic Bachelor - HO)* Pedagogical sciences: Social-for-Achy (*Academic Bachelor's - HO)* Pedagogical sciences: without specific specialisations *(Academic Bachelor - HO)* The psychology : without specific specialisations *(Academic Bachelor - HO)* **HO - Master** Agogical *sciences (Master - HO)* Educational Studies *(Master - HO)* Educational sciences (E) *(Master - HO)* Educational Studies (E) *(Master - HO)* Educational Sciences *(Master - HO)* Education and Educational Sciences *(Master - HO)* Pedagogical sciences: Clinical ortho-pedagogy and Disability Studies *(Master - HO)* Pedagogical sciences: Education and Educational Sciences *(Master - HO)* Pedagogical sciences: Orthopedagogy *(Master - HO)* Pedagogical sciences: Pedagogy and Education (*Master - HO)* The psychology : Work and Organizational Psychology *(Master - HO)* Social Work *(Master - HO)* Social Work and Social Policy *(Master - HO)*

Career Progression

Depending on the national context and entry requirements, certain counselling positions may require certifications or licenses. Networking and Professional Development requires becoming a member of counselling associations or disability-focused organizations. These networks can provide valuable resources and networking opportunities. It is also important to stay updated with the latest counselling techniques, trends, practices and disability-related services through workshops, seminars, and online courses. Since career guidance and counselling is a cross-scientific field, professionals may switch to other similar or complementary roles, such as human resources specialist, social services specialist,

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college admissions counsellor, corporate recruiter, entrepreneurship coach, career coach, job placement specialist etc.

Employment trends

In the fast-changing labour market and new employment trends in the world of work, Career guidance is now more important than ever for recovery plans and forward-looking strategies for helping workers stay employed, and enterprises stay competitive. Several international databases indicate that employment of school and career counselors and advisors is projected to grow. Schools are expected to hire more counselors and advisors to respond to the developmental, academic, and career-planning needs of their students. Demand for career counselors is projected to increase as a growing number of colleges and universities open career centers that focus on helping students prepare to enter the workforce. Career counselors and advisors also will be needed to assist jobseekers, such as those changing careers and laid-off workers looking for jobs, as well as diverse disadvantaged groups needing help in career and social inclusion.

Resources (by country)

General	O*NET OnLine. https://www.onetonline.org/link/summary/21-1012.00 U.S. Bureau of Labor Statistics. Occupational Outlook Handbook. https://www.bls.gov/ooh/community-and-social-service/school-and-career-counselors.htm#tab-1 CEDEFOP. https://www.cedefop.europa.eu/en/tools/vet-glossary/glossary/praticienne-de-lorientation-professionnelle Career Explorer. https://www.careerexplorer.com/careers/career-counselor/ Euroguidance Network. https://www.euroguidance.eu/good-practices-related-to-career-counseling-people-with-disabilities National Career Development Association (NCDA). https://www.ncda.org/aws/NCDA/pt/sp/compentencies_career_counseling NACE (2013). *Professional Competencies for College and University Career Services Practitioners*. National Association of Colleges and Employers. file:///C:/Users/User/Downloads/career-services-competencies%20(1).pdf LinkedIn https://www.linkedin.com/pulse/job-training-career-counseling-market-growth ILO https://www.ilo.org/employment/Informationresources/covid-19/other/WCMS_867023/lang--en/index.htm
Greece	National Organization for the Certification of Qualifications and Vocational Guidance (ΕΟΠΠΕΠ)

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	https://www.eoppep.gr/index.php/el/how-to/register-freelance
Italy	Atlante delle professioni www.atlantedelleprofessioni.it Counseling Italia counselingitalia.it Asnor asnor.it Almalaurea www.almalaurea.it Jobadvisor jobadvisor.it
Cyprus	CAREER COUNSELLING AND EDUCATIONAL SERVICES (CCES) https://www.moec.gov.cy/ysea/en/ Red Interuniversitaria de Profesorado de Orientación (RIPO): https://ripo.es/
Portugal	Sociedade Portuguesa de Coaching Profissional (sp-coaching.pt) (14) Como transitar para a Carreira de Conselheiro? | LinkedIn
Spain	Information for Career Counsellors: https://euroguidance-spain.educacionyfp.gob.es/recursos.html
Belgium	*CEDEFOP Belgium* *Professional competency profile: Career counselor* *https://www.onderwijskiezer.be/v2/beroepen/beroep_detail.php?beroep=363* *Guidance System in Belgium (Flanders)*

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Customer Service Provider

Related occupations

Call Center Representative, Client Services Representative, Customer Care Representative (CCR), Customer Service Agent, Customer Service Representative (CSR), Customer Service Specialist, Customer Support Representative (Customer Support Rep), Customer Service Officer.

Working Conditions

CUSTOMER SERVICE PROVIDERS are employed in nearly every industry. The largest employers of customer service providers are: Retail trade, Insurance carriers and related activities, Business support services, Wholesale trade and Professional, scientific, and technical services. Customer service providers may work in open-plan offices, working alongside other employees, so they might have to deal with noise and distractions. Working remotely is also possible in some companies. They provide services by phone, but some also interact with customers face to face, by email or text, via live chat, and through social media. Customer service representatives typically use a telephone, computer, and other office equipment. For example, representatives who work in call centers answer the phone and use computers to explore solutions for customers. Customer service providers may be under pressure to answer a designated number of calls while supervisors monitor them for quality assurance. In addition, the work may be stressful when customer service providers must interact with dissatisfied customers. In retail stores, customer service providers may spend hours on their feet assisting customers in person. They may work full time, part time, or in shifts, including evenings, weekends, and holidays, to ensure coverage across different time zones or peak service periods.

Responsibilities, knowledge, competences and skills, expected results

Core Activities and Tasks

Customer service providers' core activities include addressing customer inquiries, resolving complaints, and providing information about products or services. They strive to understand customers' needs and preferences, offering personalized assistance and recommendations when necessary. Additionally, customer service providers may process orders, handle returns or exchanges, and assist with billing or payment inquiries. They often communicate with customers through various channels, including phone, email, live chat, or in-person interactions, and maintain accurate records of customer interactions and transactions. Their goal is to build and maintain strong customer relationships, promote customer loyalty, and uphold the reputation of the company by delivering exceptional service at every touchpoint.

Knowledge, Competences and Skills

Customer service providers should possess a deep understanding of the products or services offered by their company, as well as policies and procedures related to customer interactions. Strong communication skills, both verbal and written, enable them to articulate information clearly, actively listen to customer concerns, and empathize with their needs. They should demonstrate problem-solving to address customer inquiries and resolve issues in a timely and satisfactory manner. They also need to exhibit patience, diplomacy, and professionalism when handling challenging situations or irate customers. Additionally, proficiency in technology and customer relationship management (CRM)

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systems allows them to efficiently manage customer interactions, track inquiries, and provide accurate and timely responses.

Work prospects and opportunities for PWDs

Customer service is a diverse field, and while companies increasingly prioritize diversity and accessibility, there is a growing recognition of the valuable contributions that PWDs can bring to customer service roles. With proper accommodations and support, PWDs can engage in various customer service positions, including call center representatives, retail associates, and client support. Moreover, advancements in assistive technologies and inclusive workplace practices further facilitate the integration of PWDs into customer service roles. They can also be involved in providing administrative support, managing schedules, coordinating appointments, and handling communication on behalf of clients or businesses remotely.

Formal education (by country)

Greece	Even though a bachelor's degree is not necessary to work in this position, having a high school diploma (NQF Level 4 and EQF Level 4) may be necessary to be hired for this role. A training certificate in this field (eg. customer service certification, help desk certification, call center certification, client services certification, customer experience certification) may be an asset. Sometimes the organization hiring for the role offers this training on-site, but there are also such training programs and seminars available online.
Italy	To work as a Customer Service Provider in Italy, the educational requirements may vary depending on the employer and the specific role. While formal education is not always mandatory for customer service positions, having a high school diploma (NQF Level 4 and EQF Level 4) is most of the time required. It's important to note that while a formal education background can be beneficial, customer service positions often prioritize practical skills, experience, and a customer-oriented mindset. Additionally, specific training certificates related to customer service excellence or communication skills can enhance one's qualifications for such roles. Various vocational training programs and courses are available that specifically focus on customer service skills (i.e. customer service, customer care, help desk, call center, customer experience). These may be offered by vocational schools, public employment centers, training centers, or online platforms. Sometimes the organization hiring for the role offers this training internally.
Cyprus	In Cyprus, employment in customer service typically does not necessitate a specific educational attainment. Positions in customer service are commonly available to candidates possessing diverse educational backgrounds, ranging from high school graduates to individuals with advanced education.

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Portugal	In Portugal, working in customer service typically doesn't require a very extensive educational or academic background, as these positions often have relatively low education requirements. However, having the right education and skills can help one stand out and advance in their career, such as having at least secondary education up to the 12th grade (NQF Level 3 and 4 and EQF Level 3 and 4).It is advantageous to have knowledge of foreign languages, especially English, and to be familiarise with the common tools and technologies used in this field.
Spain	In Spain, working in customer service generally does not require a specific level of education. Customer service positions are usually open to candidates with a wide range of educational levels, from high school graduates to people with higher education.
Belgium	For the Customer Service Provider position in Belgium the requirements may vary depending on the employer. Usually the following educational background is preferred: HO - Bachelor's Business management : Marketing *(Professional bachelor - HO)* Economics *(Academic Bachelor's - HO)* HO - Master Communication sciences : Media, strategy and marketing *(Master - HO)* Commercial engineer : Marketing Intelligence *(Master - HO)* The commercial sciences : Management and Computer Science *(Master - HO)* The commercial sciences : Marketing Management *(Master - HO)* VDAB training courses Find out if there is a training course on the VDAB website.

Career Progression

Entry-level customer service providers can start with no prior experience. With experience, they may advance to management roles, such as senior customer service representative or team leader, where they oversee a team of agents, handle escalated issues, and assist with training and mentoring. Senior managerial roles, such as customer service manager or director, involve strategic planning, performance management, and implementing initiatives to improve customer satisfaction and operational efficiency.

Employment trends

Advancements in technology will gradually allow automated systems to do many of the customer service providers' tasks. Self-service systems, social media, and mobile applications enable customers to do simple tasks without interacting with a representative. However, openings are expected to result from the need to replace workers who transfer to other occupations or exit the labor force, such as to retire. Moreover, jobs for customer service representatives are projected to be added in business support services, which includes telephone call centers. Some businesses will contract out their customer service operations to telephone call centers that provide consolidated sales and customer service functions. However, some companies will continue to use in-house service centers to differentiate themselves from competitors, particularly for complex inquiries such as refunding accounts or confirming insurance coverage. Employment in the occupation of customer service providers in European countries is

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projected to grow by a further 25 per cent over the period 2018 to 2030. This equates with the creation of 1.5 million new jobs. In addition, an estimated 3.2 million people will leave their jobs between 2018 and 2030 (mainly to retire). This means that around almost 4.7 million job openings will need to be filled.

Resources (by country)

General	U.S. Bureau of Labor Statistics. Occupational Outlook Handbook. https://www.bls.gov/ooh/office-and-administrative-support/customer-service-representatives.htm#tab-2 O*NET OnLine. https://www.onetonline.org/link/details/43-4051.00 CEDEFOP. https://www.cedefop.europa.eu/en/data-insights/customer-clerks-skills-opportunities-and-challenges-2019-update European Commission. ESCO. https://esco.ec.europa.eu/en/classification/occupation_main Indeed. https://www.indeed.com/hire/job-description/customer-service-representative Forbes Advisor. https://www.forbes.com/advisor/business/customer-service-job-description/ Cedefop https://www.cedefop.europa.eu/en/data-insights/customer-clerks-skills-opportunities-and-challenges-2019-update
Greece	Hellenic Institute of Customer Service (HICS) https://www.customerservice.gr/en/hics
Italy	Associazione Italiana Customer Service Customer Management Insights www.cmimagazine.it
Cyprus	In Cyprus, there is no specific association dedicated exclusively to customer service professionals. While there are organizations focused on broader aspects of consumer rights and business practices, such as the Cyprus Consumers' Association (CCA), they do not specifically cater to the professional development or networking needs of individuals working in customer service roles. Consequently, those in the customer service sector may need to look towards broader business, trade, or consumer associations for resources, information, and professional support related to their field.
Portugal	
Spain	Asociación Española de Expertos en la Relación con los Clientes (AEERC): https://www.aeerc.com/aeeccc_quienes.cfm

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Belgium	CEDEFOP Belgium Guidance System in Belgium (Flanders) https://www.onderwijskiezer.be/v2/beroepen/beroep_detail.php?beroep=1856 https://competent.vdab.be/competent/release/current/occupationalprofile/OP-705

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E-commerce specialist

Related professions

Digital Marketing Specialist, UX/UI Designer, Data Analyst, Supply Chain Manager, Customer Relationship Manager

Working Conditions

E-COMMERCE SPECIALISTs specialize in managing and optimizing online platforms for buying and selling goods and services. Their role is crucial in the digital marketplace, where they focus on enhancing the overall online shopping experience for customers and driving business growth. E-commerce specialists typically work in dynamic and fast-paced environments, often within e-commerce companies, retail organizations, or digital marketing agencies. Their working conditions can vary depending on the specific role and industry, but generally involve a combination of office-based and remote work. E-commerce specialists may spend a significant amount of time in front of computers, conducting online research, analyzing data, and managing e-commerce platforms and digital marketing campaigns. They often collaborate with cross-functional teams, including marketing, sales, and IT professionals, to develop and implement e-commerce strategies, initiatives and products. Additionally, e-commerce specialists may need to adapt to changing priorities and deadlines, especially during peak sales periods or when launching new products or promotions. E-commerce Specialists play a pivotal role in the success of online businesses by optimizing websites, attracting customers, and facilitating seamless transactions. While the work can be demanding and require long hours at times, it also offers opportunities for creativity, innovation, and professional growth in the dynamic and rapidly evolving field of e-commerce.

Responsibilities, knowledge, competences and skills, expected results

Core Activities and Tasks

E-commerce specialists' core activities include overseeing the design and functionality of e-commerce websites. They also develop and implement digital marketing strategies to drive traffic to the website, increase conversions, and maximize sales. E-commerce specialists analyze market trends and customer behavior data to identify opportunities for product assortment expansion and pricing optimization. They collaborate with marketing, sales, and IT professionals, to launch new products, promotions, and campaigns effectively. Additionally, they monitor and evaluate key performance metrics, such as website traffic, conversion rates, and customer satisfaction, to continuously improve e-commerce performance and achieve business objectives.

Knowledge, Competences and Skills

E-commerce specialists should possess a deep understanding of e-commerce platforms, website design principles, and user experience (UX) best practices, enabling them to create engaging and intuitive online shopping experiences for customers. Proficiency in digital marketing strategies, including search engine optimization (SEO), pay-per-click (PPC) advertising, and email marketing, allows them to drive traffic to e-commerce websites and maximize conversions. E-commerce specialists should also demonstrate analytical skills to interpret data, such as sales trends and customer behavior metrics, and make informed decisions to enhance performance and profitability. Strong project management, time

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management and collaboration abilities are essential. Additionally, they need to stay updated on industry trends, emerging technologies, and tools, and E-commerce trends.

Work prospects and opportunities for PWDs

E-commerce industry is an inclusive field with a wide range of job roles and responsibilities, which can be performed by individuals with various disabilities. PWDs can engage in several roles, including:

- content creation, copywriting, and social media management for e-commerce companies, creating content targeting a broader audience, including those with disabilities.
- data analysis, SEO (search engine optimization), and digital marketing, focusing on optimizing websites and content for better online visibility and user experience.
- customer services, assisting customers with inquiries and issues. This role can be performed remotely and is suitable for people with various disabilities, especially those with good communication skills.
- inventory management and logistics roles, involving tracking stock levels, managing warehouses, and coordinating product shipping.

Also, PWDs with skills in graphic design, video production, and multimedia content creation can work in creating visually appealing and accessible product listings, banners, and promotional materials.
In addition, PWDs can acquire expertise in web accessibility, helping e-commerce businesses to ensure that their websites are accessible to persons with disabilities. This role involves assessing and making necessary adjustments to improve the website's accessibility, including optimizing it for screen readers and assistive technologies.
Accommodations and advanced assistive technologies, such as screen readers, voice recognition software, and ergonomic workspace adjustments can enhance accessibility and empower PWDs as E-commerce specialists. The flexibility of remote working and platform-based E-commerce allows PWDs to manage their schedules and work from comfortable environments. Job sharing or work on-demand options further promote work-life balance, enabling PWD to excel in this dynamic field while catering to their specific needs and abilities.
Many e-commerce companies hire freelancers for various tasks, such as product photography, content writing, or digital marketing. Freelancing offers flexibility and the opportunity to choose projects that match one's abilities and preferences. PWDs can also consider starting their e-commerce businesses. With the growth of online marketplaces and drop shipping, launching a small e-commerce venture can be accessible and inclusive.

Formal education (by country)

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Greece	E-commerce specialists typically need a high school diploma (NQF Level 4 and EQF Level 4) and vocational training in the field, or/and relevant work experience. A number of continuing vocational training programmes on e-commerce are offered by private lifelong learning centers and other private bodies. Moreover, universities organize relevant training programmes/ seminars. Indicatively, some of these programmes appear below: • Course titled "E-commerce: Learning the Aspects of eCommerce", Lifelong Learning Center, Athens University of Economics and Business https://diaviou.aueb.gr/programs/1762-ilektroniko-emporio-mathainontas-tis-ptyxes-tou-ecommerce-1000144 • Course titled "Magento for eCommerce - E-Commerce: The Aspects of eCommerce", E-learning programme, National and Kapodistrian University of Athens https://elearningekpa.gr/courses/magento-gia-ecommerce-hlektroniko-emporio-oi-ptuxes-tou-ecommerce • Course titled "E-Commerce", Scientific Association for the Promotion of Educational Innovation https://kem.edu.gr/project/voucher-ecommerce/ • Course titled "E-commerce systems specialist", Private Lifelong Learning Center https://members.eepek.gr/moocactions/showoneseminar/eidikos-systimaton-ilektronikoy-emporioy-e-commerce Further, having a bachelor's degree would be an additional asset for professionals in this field. These qualifications are equivalent to NQF Level 6 and EQF Level 6 is required. Relevant disciplines include, but are not limited to, business administration, marketing, communication studies, economics and informatics. Below is a list of indicative university programmes: • Bachelor's degree in Informatics. Department of Informatics. School of Sciences. University of Western Macedonia. • Bachelor's degree in Digital Systems. Department of Digital Systems. School of Information and Communication Technologies. University of Piraeus. • Bachelor's degree in Marketing and Communication Department of marketing & communication Athens university of economics and business • Bachelor's degree in Business Administration with a major in Marketing and Operations Management Department of business administration

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	University of Macedonia • Bachelor's degree in Marketing and Communication Department of Organization Management, Marketing and Tourism International Hellenic University • Bachelor's degree in Marketing Department of commerce and marketing Technological educational institution of Crete • Bachelor's degree in business administration University of Patras University of Western Attica University of Thesally Athens University of Economics and Business International Hellenic University University of the Aegean University of Piraeus • Bachelor's degree in Economics University of Piraeus Athens University of Economics and Business University of West Macedonia University of Peloponnese University of Ioannina
Italy	To work as an E-commerce specialist in Italy, the educational requirements may vary depending on the employer and the specific role. Formal education is not a strict requirement, as practical experience and specialized skills are often highly valued in this field. While formal education is not always mandatory, having a high school diploma (NQF Level 4 and EQF Level 4) or equivalent is often considered beneficial. Additionally, having relevant educational qualifications can provide a strong foundation and enhance your prospects. Here's an overview of the recommended education and university programs available in Italy: • Bachelor's Degree in Communication Sciences and Digital Media (Laurea Triennale in Scienze della Comunicazione e Media Digitali) - Class L-20, NQF:6, EQF: 6. • Bachelor's Degree in E-commerce and Digital Business (Laurea Triennale in E-commerce e Business Digitale) - Class L-18, NQF: 6, EQF: 6..

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	• Master's Degree in Digital Marketing and E-commerce (Laurea Magistrale in Marketing Digitale e E-commerce) - Class LM-77, NQF: 7, EQF: 7. • Master's Degree in Digital Business and E-commerce Management (Laurea Magistrale in Business Digitale e Gestione dell'E-commerce) - Class LM-77, NQF: 7, EQF: 7 Alongside or instead of formal degree programs, there are numerous online courses and certifications available that specifically focus on E-commerce and digital marketing. Platforms like Coursera, Udemy, and LinkedIn Learning offer courses on topics such as E-commerce management, SEO, digital advertising, web analytics, and conversion optimization. Ultimately, as the field of e-commerce is constantly evolving while formal education can be beneficial, gaining practical experience, staying updated with industry trends, and continuously developing relevant skills are equally important in the field of e-commerce.
Cyprus	In Cyprus, there are no specific rules or bachelors for the profession of an E-commerce specialist, and therefore no educational qualifications, registrations, or minimum periods of compulsory professional practice are required. However, for those interested in pursuing a career in E-commerce, various educational paths are available, such as: Recommended educational paths include: Diplomas offered by SCP Academyin areas like IT and Computing, Sales and Marketing, or Business Management. www.scp.ac.cy Online courses and certifications focusing on E-commerce management, SEO, digital advertising, web analytics, and conversion optimization, available on platforms like Coursera, Udemy, and LinkedIn Learning. https://www.udemy.com/ https://www.coursera.org/
Portugal	Becoming an e-commerce specialist in Portugal doesn't necessitate adherence to a particular academic route. Instead, a successful path typically comprises a blend of formal education, practical training, and firsthand experience in the field. This combination often serves as the cornerstone for individuals aiming to excel as e-commerce experts. While not strictly necessary, an undergraduate degree in e-commerce-related areas such as Marketing, Management, Digital Business Management or Information Technology can provide a solid foundation of relevant knowledge. Such courses offer a comprehensive understanding of fundamental business principles, online marketing strategies, e-commerce methodologies, and information technology, aiding individuals in gaining valuable insights into these domains. Non-formal training opportunities, such as online courses, workshops, and specialized e-commerce training, are available for individuals seeking to develop technical skills. These programs focus on areas such as proficiency in e-commerce platforms (e.g., Shopify, WooCommerce, Magento), SEO (Search Engine Optimization), digital marketing strategies, online ad management, and data analysis and management skills. **Universities**: 1. University of Lisbon (ULisboa) - https://www.ulisboa.pt/ 2. University of Porto (UP) - https://www.up.pt/portal/pt/ 3. University of Coimbra (UC) - https://www.uc.pt/

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	4. University of Aveiro (UA) - https://www.ua.pt/ 5. NOVA University of Lisbon (NOVA) - https://www.unl.pt/ 6. University of Minho (UM) - https://www.uminho.pt/PT 7. University of Évora (UE) - https://www.uevora.pt/ **Polytechnic Institutes**: 1. Lisbon Polytechnic (IPL) - https://www.ipl.pt/ 2. Porto Polytechnic (IPP) - https://www.ipp.pt/ 3. Coimbra Polytechnic (IPC) - https://www.ipc.pt/ipc/ 4. Setúbal Polytechnic (IPS) - https://www.si.ips.pt/ips_si/web_page.inicial **Business and management schools**: - Católica Lisbon School of Business and Economics - https://www.ucp.pt/pt-pt - NOVA University - https://www.novasbe.unl.pt/pt/
Spain	Specific training and experience in the field of e-commerce and digital marketing is generally required. The level of education may vary by company and specific position, but it is common for e-commerce specialists to have at least a bachelor's degree (EQF 6) in areas related to digital marketing, e-commerce or computer science. Bachelor's Degree in Marketing https://www.educaweb.com/estudio/titulacion-grado-marketing/ Master's Degree in Digital Marketing https://www.educaweb.com/estudio/titulacion-master-oficial-marketing-digital/
Belgium	In Belgium, different paths can lead to this particular profession. Education Selector provides an overview per study level of the basic training(s) that is considered to be crucial for this profession. Also specific training may be legally required. Here is the list of relevant educational backgrounds for this profession: HO - Bachelor's Business management : Marketing *(Professional bachelor - HO)* Business Management : Marketing (E) *(Professional Bachelor's - HO)* HO - Master Communication sciences : Media, strategy and marketing *(Master - HO)* Commercial engineer : Marketing Intelligence *(Master - HO)* The commercial sciences : Marketing Management *(Master - HO)* HO - Postgraduates Digital marketing communication *(Postgraduate - HO)* VDAB training courses Find out if there is a training course on the VDAB website.

Career Progression

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Experienced E-commerce specialists can progress to managerial roles, overseeing teams and strategies, including positions as E-commerce Specialist/Coordinator, E-commerce Analyst, E-commerce Manager, E-commerce Director/Head of E-commerce. Entrepreneurial-minded specialists may venture into launching their own E-commerce enterprises, leveraging market trends and innovative approaches to build and manage their online businesses.

Employment Trends

The European continent is home to diverse markets, in particular, intricate digital markets. After the rapid growth of internet users during the Covid-19 pandemic, they appear to have stabilized at 92% of the total European population. Despite challenges with inflation and a declining population, GDP continues to grow both regionally and across Europe. Every year, the e-shopper population grows, as does E-GDP. Western Europe remains the leader in terms of its share of B2C e-commerce turnover in Europe, consistently encompassing over 67% of total turnover, with Southern Europe catching up at 16%. Forecasts estimate that by 2025 there will be a significant increase in e-commerce in most European countries. Companies, regardless of their size, are in a continuous process of adopting e-commerce sales. E-commerce has a promising future as new technological and commercial breakthroughs open up several growth opportunities. Trends like AI-powered personalized marketing, customer support, smart search, and automation are now widely used in many businesses' day-to-day operations.

Resources (by country)

General	Ecommerce Europe ecommerce-europe.eu European E-commerse Report 2023 https://www.upu.int/UPU/media/wwwUpuIntUniversalPostalUnionAboutUpuBodiesConsultativeCommittee/2023EuropeanEcommerceReportEn.pdf Soava, G., Mehedintu, A., & Sterpu, M. (2022). Analysis and Forecast of the Use of E-Commerce in Enterprises of the European Union States. Sustainability, 14(14), 8943.
Greece	Greek E-commerce Association (GR.EC.A), https://www.greekecommerce.gr/ E-commerce: practical guide from SEV for proper communication between businesses and consumers - Hellenic Federation of Enterprises (SEV) https://www.sev.org.gr/ekdoseis/e-commerce-praktikos-odigos-apo-ton-sev-gia-sosti-epikoinonia-epicheiriseon-kai-katanaloton/
Italy	Associazione Italiana Commercio Elettronico www.aicel.org Linea eCommerce www.lineaecommerce.it Ecommercemag www.ecommercemag.it
Cyprus	Ecommerce News Europe - Cyprus Section:https://ecommercenews.eu/tag/cyprus/
Portugal	O que é o E-Commerce | Portugal Exporta

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	#ECOMMERCEPORTUGAL | Comércio Digital (comerciodigital.pt)
Spain	Books: - Vender con éxito en Amazon, Pablo Renaud y NAcho Somalo - Directo, Digital e Interactivo, Nacho Somalo - Hackeando el cerebro de los compradores, Jóse Cortizo Podcast: Marketing4ecommerce Ecommerce Bussices Club (EBC): https://ecommercebusinessclub.com/ecommerce-espana/
Belgium	CEDEFOP Belgium Guidance System in Belgium (Flanders) https://www.onderwijskiezer.be/v2/beroepen/beroep_detail.php?beroep=1860 https://competent.vdab.be/competent/release/current/occupationalprofile/OP-694

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Farm Worker and Gardener

Related occupations

Farm laborer, Greenhouse worker, Grower, Harvester, Ranchers, Forest workers, Animal care worker.

Working Conditions

Farm workers and gardeners often work in rural or remote locations, away from urban areas, and may need to commute to farms or gardens located some distance away from their homes. They may spend long hours on their feet, performing physical labor such as planting, harvesting, weeding, watering, and pruning crops or plants. They may operate various types of machinery and equipment, such as tractors, irrigation systems, or gardening tools, requiring them to adhere to safety protocols and procedures to prevent accidents or injuries. Their working conditions can vary depending on the season, crop cycle, and specific tasks required. They work outdoors, exposed to various weather conditions, such as extreme heat, cold, rain, or sunshine. To harvest fruits and vegetables by hand, they frequently bend and crouch. They also lift and carry crops and tools that may be heavy. They use hand tools, such as shovels, trowels, hoes, tampers, pruning hooks, shears, and knives. They may work independently or as part of a team, collaborating with other farm workers, supervisors, or farm owners. Overall, while the work can be physically demanding and challenging, farm workers and gardeners often enjoy the opportunity to work outdoors and contribute to the cultivation and maintenance of crops, plants, and landscapes.

Responsibilities, knowledge, competences and skills, expected results

Core Activities and Tasks

Farm workers and gardeners are responsible for a variety of tasks related to the cultivation and maintenance of crops, plants, and landscapes. Their core activities include planting seeds or seedlings, watering plants, applying fertilizers or pesticides, and harvesting crops when they reach maturity. They also perform tasks such as weeding, pruning, and transplanting to ensure the health and productivity of plants. Additionally, farm workers and gardeners may operate and maintain machinery and equipment, such as tractors, irrigation systems, and gardening tools, to facilitate their work. Overall, farm workers and gardeners play a crucial role in the agricultural industry by contributing to the production of food, ornamental plants, and other agricultural products essential for human consumption and ecosystem health.

Knowledge, competences and skills

Farm workers and gardeners should have a solid understanding of plant biology, cultivation techniques, and soil management practices to ensure the healthy growth and development of crops and plants. Proficiency in operating and maintaining agricultural machinery and equipment, such as tractors, plows, and irrigation systems, is crucial for efficiently carrying out farming tasks. Additionally, farm workers and gardeners demonstrate physical stamina, dexterity, and attention to detail to perform manual labor tasks such as planting, harvesting, and weeding. They also possess problem-solving abilities to identify and address issues related to pest infestations, disease outbreaks, or environmental conditions affecting crop growth. Effective communication and teamwork skills enable them to collaborate with colleagues, supervisors, and farm managers to accomplish daily tasks and achieve production goals. Moreover, farm workers and gardeners often need to adapt to changing weather conditions, seasonal variations, and

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unforeseen challenges inherent in agricultural work, demonstrating resilience and adaptability in their roles.

Work prospects and opportunities for PWDs

PWDs can be valuable contributors to the agricultural and gardening industries. Garden design and planning roles are well-suited for PWDs with various types of disabilities, who may possess creative and planning skills. Potential roles for PWDs as farm workers and gardeners may involve:

1. Accessible Garden Planning and Design: They can specialize in designing accessible and inclusive gardens that cater to the needs and preferences of diverse users. Creating accessible garden spaces with raised beds and wide, flat pathways can accommodate PWDs, including those using wheelchairs or mobility aids. These accessible garden designs make it easier for gardeners with limited mobility to plant, weed, and harvest.
2. Irrigation and Watering Systems: PWDs can manage irrigation and watering systems, ensuring that plants receive the proper amount of water. These roles may involve operating automated irrigation systems or adjusting water flow to meet plant needs.
3. Plant Selection and Horticulture Therapy: PWDs can specialize in plant selection for gardens and therapeutic horticulture. Horticultural therapy involves using plants and gardening as a means of rehabilitation and therapy for persons with disabilities. People with visual impairments can become horticultural therapists, using gardening as a therapeutic tool to help others.
4. Organic and Sustainable Farming: PWDs can participate in organic and sustainable farming practices, focusing on eco-friendly, inclusive, and community-supported agriculture. These practices emphasize soil health, biodiversity, and community engagement.
5. Farm Management and Record-Keeping: Individuals with disabilities can play vital roles in farm management, overseeing operations, record-keeping, and administrative tasks that support the success of the farm.
6. Vocational Training and Education: Some PWDs may choose to work in agricultural education, sharing their knowledge and expertise with others interested in pursuing careers in farming and gardening.
7. Entrepreneurship: Starting a small-scale gardening or farming business tailored to one's abilities and interests can be a viable option and fulfilling career path for PWDs. Options may include a market garden, a flower shop, or a nursery.
8. Agricultural Research and Development: Some individuals may choose careers in agricultural research, which can include developing new and accessible farming technologies or identifying innovative farming practices.

Necessary accommodations to support PWDs in farming and gardening roles may include accessible pathways, modified workstations, and support with transportation or mobility. Some PWDs may require adaptive equipment and tools to perform tasks more comfortably and effectively. These tools can include modified hand tools, wheeled mobility aids, or ergonomic implements. For those with mobility challenges or sensitivity to outdoor conditions, indoor gardening or greenhouse work can provide an accessible and climate-controlled environment for tending to plants.

Formal education (by country)

Greece	Formal qualifications are not usually required to work as a farm worker or gardener. Lower secondary school certificate (3 years) (NQF Level 2 and EQF Level 2) or general

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	upper secondary school leaving certificate (NQF Level 4 and EQF Level 4) and on-the-job training is generally enough for entry-level work as a farm worker or gardener. A vocational upper secondary school (EPAL) degree in agro-food agronomy and environment or a vocational school (EPAS) certificate in horticultural business - landscape architecture can increase an applicant's job prospects. These qualifications are equivalent to NQF Level 4 and EQF Level 4. Recommended educational paths include: Horticultural business - Landscape architecture Vocational Schools (EPAS): https://www.dypa.gov.gr/fytotexnikon-epixirhseon-arxitnikhs-topiu Agro-food agronomy and environment Vocational upper secondary school (EPAL) https://www.minedu.gov.gr/texniki-ekpaideusi-2/stoixeia-epal-p-epal-ek/tomeis-eidikotites-ana-pde-epal-2021-2022 https://www.esos.gr/sites/default/files/articles-2023/fek-2023-tefxos_b-04040-downloaded_-23_06_2023.pdf
Italy	Formal qualifications are not usually required to work as a Farm worker or gardener. The conclusion of the compulsory ten-year education or the first two years of education of upper secondary school (NQF Level 2 and EQF Level 2) or general upper secondary school certificate (NQF Level 4 and EQF Level 4) and on-the-job training is generally enough for entry-level work as a farm worker or gardener. Within the Vocational education and training system (IeF.P.) two different paths are available: qualification of Agricultural Operator (three years) and Agricultural Technician diploma (four years). The qualification of Agricultural operator - tree, herbaceous and horticultural crops, permits students to learn to grow seed and fruit plants in the field and in the greenhouse. Specifically, to take care of planting, fertilizing, pruning and treating plants, protecting them from diseases and insects. The Professional Agricultural Technician Diploma allows to acquire skills in the field of operations relating to livestock and plant production, both in what concerns the transformation of the company's primary products and the protection and protection of the natural environment. Within the Technical Institute system (5 years, NQF:4, EQF: 4), the Agricultural, Agri-food and Agro-industry Technical Institute provides theoretical and practical preparation in the field of the agricultural sector and land management. The Agriculture, Agri-food and Agro-industry Technical Institute permits to obtain the qualification of Agricultural Expert: a professional able to organize work on agricultural companies, check the quality

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	of products and promote their sale, control expenses, and carry out land registry operations. After the Agricultural, Agri-Food and Agro-Industry Technical diploma individuals can decide to start working straight away, or: - to attend an ITS (Higher Technical Institute) in the field of New Technologies for Made in Italy; - to study at University (University degrees such as Forest Sciences, Veterinary Medicine, Geology, Biological and Natural Sciences)
Cyprus	Cyprus University of Technology: The Cyprus University of Technology offers a university degree in agricultural sciences with specializations in Crop Science and Technology, Food Science and Technology, and Animal and Dairy Science. This program is the first and unique Department of Agricultural Sciences, Biotechnology and Food Science in Cyprus, aiming to contribute to the technological upgrading and modernization of the agri-food sector of the island. You can find more information here. Recommended educational paths include: https://www.cut.ac.cy/faculties/gem/abf/?languageId=1 EQF levels range from basic (Level 1) to advanced (Level 8, which is a Ph.D. level).
Spain	To work as a farmer and gardener in Spain, generally no specific formal educational level is required. These are jobs that can be learned through experience, on-the-job training and specialized training courses. Often, practical skills and experience in the field are more valued than a formal educational level. Degree in Agricultural Engineering https://www.educaweb.com/estudio/titulacion-grado-ingenieria-agricola/
Portugal	In Portugal, formal qualifications are not required to work as a farm worker or gardener. This is a profession that is generally passed down from generation to generation or that can be learned simply by working with someone already experienced. However, there are several training options at higher academic levels and in technical and vocational courses. There are secondary education institutions with the objective to train intermediate technicians, with qualifications equivalent to the 12th year of schooling (NQFlevel 4 or 5 and EQF level 4 or 5). **Schools** · Portuguese Association of Agricultural Schools - https://www.apepa.pt/

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	Universities • University of Lisbon (ULisboa) - Faculty of Sciences - https://ciencias.ulisboa.pt/ • University of Évora - https://www.uevora.pt/ • University of Trás-os-Montes and Alto Douro (UTAD) - https://www.utad.pt/ **Polytechnic** • Polytechnic of Bragança (IPB) - https://portal3.ipb.pt/index.php/pt/ipb • Polytechnic of Viana do Castelo (IPVC) - https://www.ipvc.pt/ • Polytechnic of Leiria (IPL) - https://www.ipleiria.pt/ • Polytechnic of Santarém (IPS) - https://www.ipsantarem.pt/
Belgium	In Belgium, a specific qualification is not usually required to work as a farm worker or gardener. Lower secondary school certificate (3 years) (NQF Level 2 and EQF Level 2) or general upper secondary school leaving certificate (NQF Level 4 and EQF Level 4) and on-the-job training is generally enough for entry-level work as a farm worker or gardener. Here is the list of possible educational backgrounds for this profession: 3rd Grade SO Landscaping and management dual - *BSO* Landscaping and management dual - *DBSO* Landscaping and management dual - *BSO* Natural and green engineering - *TSO* Plant engineering sciences - *TSO* Horticulture and Green supplies - *BSO* 7th Specialization Year of BSO Forestry and forest management Landscaping and maintenance Garden slayer green manager dual Horticultural production Se-n-Se Agro and green management Agro and green mechanism DBSO Green aplaying and management dual Gardening trailer / green manager dual Apprenticeship Tree nurser Landscaping and management dual Green Manager / Gardening - BuSO Assistant plant production dual - *BuSO Form 3* Landscaping and management - *BuSO Form Training Form 4* Green and garden management staff - *BuSO Training Form 3*

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	Nature and green techniques dual - *BuSO Training Form 4* Landscaping and maintenance - *BuSO Training Form 4* Gardening agent green manager dual - *BuSO Training Form 4* Horticulture and landscaping - *BuSO Training Form 4* Syntra training courses Garden contractor Garden contractor - gardener Garden designer Garden caretakers VDAB training courses Find out if there is a training course on the VDAB website.

Career Progression

Farm workers and gardeners may advance to crew leader or other supervisory positions (ex. agricultural managers). The ability to speak English, the continuous professional development and the expansion of their skills (ex. upskilling to the new technologies) are very helpful. Some agricultural workers aspire to own their own farms and ranches. Knowledge of produce and livestock may provide an excellent background for becoming buyers or purchasing agents of farm products. Those who earn a college degree in agricultural science could become agricultural or food scientists.

Employment trends

According to Cedefop forecasts, farmworkers and gardeners are reportedly an occupation with average risk of automation. Although overall employment of agricultural workers is projected to show little or no change up to 2031, limited employment growth is projected over the decade. Taking into account projected job destruction and job replacement demands, an estimated 1.8 million job openings will need to be filled in between 2022 and 2035. The introduction of digital technologies – such as precision farming and new automated machinery- and the need to adopt circular economy principles, such as those advocated by the European Commission's Farm to Fork Strategy, will drive changes in the skills required of farmworkers and gardeners in the future. The prevalence of **robotics and advanced machinery** in agriculture will diversify the role of the farmer, moving away from old farming methods, manual labour and basic machinery maintenance, towards maintaining agricultural robots ('agribots'). The unattractiveness of the agricultural sector to young workers is a factor that threatens the potential to fill in the many vacant positions forecast to emerge due to the need to replace retired workers (Cedefop 2023). Climate change and environmental degradation increase farmers' responsibilities on conservation and environmental management.

Resources (by country)

General	Resources U.S. Bureau of Labor Statistics. Occupational Outlook Handbook. https://www.bls.gov/ooh/farming-fishing-and-forestry/agricultural-workers.htm O*NET OnLine. https://www.onetonline.org/link/summary/45-2092.00?redir=45-2092.02 Cedefop. Farmworkers and gardeners: skills opportunities and challenges. https://www.cedefop.europa.eu/en/data-insights/farmworkers-and-gardeners-skills-opportunities-and-challenges-2019-update

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	European Commission. (2015). *Towards a long-term strategy for European agricultural research and innovation by 2020 and beyond (background paper).* file:///C:/Users/User/Downloads/background_paper_final_laidout_9741.pdf Nesta. *Precision agriculture: separating the wheat from the chaff.* *https://www.nesta.org.uk/blog/precision-agriculture-separating-the-wheat-from-the-chaff/* EQUALvet is an Erasmus+ project funded by the European Union**.** EQUALvet aims for the development of a vocational training program for people with intellectual disabilities in the gardener assistant profession.
Greece	Ministry of Rural Development and Food https://www.minagric.gr/index.php/en/ GAIA EPICHEIREIN https://www.c-gaia.gr/ National Register of Agricultural Cooperatives and other collective bodies https://www.minagric.gr/for-farmer-2/sillogikes-agrotikes-organoseis Mediterranean Garden Society https://www.mediterraneangardensocietygreece.org/about.html
Italy	Ministry of Agriculture, Food Sovereignty and Forestry Magazine Pianeta PSR Istat Agricoltura www.istat.it/it/agricoltura L'agricoltura italiana in numeri Associazione Italiana Agricoltori
Cyprus	Cyprus Ministry of Agriculture, Rural Development and Environment:https://moa.gov.cy/?lang=en Panagrotikos Association of Cyprus: https://www.eu-delicious.eu/index.php/en/organizations/panagrotikos
Portugal	Jovem Agricultor – AJAP Agricultor: Tudo sobre esta profissão | Guia das Profissões (guiadasprofissoes.info) Jardineiro: Tudo sobre esta profissão | Guia das Profissões (guiadasprofissoes.info)
Spain	Manual of good gardening practices: https://www.elkarkide.com/wp-content/uploads/2021/04/Manual-de-Jardineria.pdf Agraria Association of Young Farmers: https://www.asaja.com/
Belgium	CEDEFOP Belgium Guidance System in Belgium (Flanders) https://www.onderwijskiezer.be/v2/beroepen/beroep_detail.php?beroep=1099 https://competent.vdab.be/competent/release/current/occupationalprofile/OP-123

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Food Preparation Helper

Related occupations

Kitchen helper, Food preparation worker, Assistant cook.

Working conditions

A FOOD PREPARATION HELPER is employed in the kitchens of restaurants, hospitals, schools, clubs, fast food outlets and catering companies. Such professionals work under the supervision of the head chef or cook. Part-time work is common. Work schedules may vary to include early mornings, late evenings, weekends, or holidays. The work can be physically demanding, and a food preparation helper may be exposed to sharp knives, hot ovens, and other hazards. They work indoors, spending most of the time standing. They collaborate with others, wear common protective or safety equipment such as gloves and use hands to handle objects and tools.

Responsibilities, knowledge, competences and skills, expected results

Core Activities and Tasks

Food preparation helpers assist chefs and cooks in various tasks involved in food preparation and kitchen operations. Their core activities include cleaning and sanitizing kitchen equipment, utensils, and workstations, as well as washing, peeling, and chopping ingredients. They may also measure and portion ingredients according to recipes, prepare simple dishes or components, and assist with food assembly and plating. Additionally, food preparation helpers may be responsible for stocking and replenishing kitchen supplies, organizing inventory, and ensuring proper storage of perishable and non-perishable items. They work under the supervision of kitchen staff, following food safety and hygiene standards to maintain a clean and organized kitchen environment. Overall, food preparation helpers support kitchen operations and ensure the efficient and timely preparation of meals for customers.

Knowledge, competences, and skills

Food preparation helpers should have basic knowledge of food safety and hygiene practices to ensure the cleanliness and sanitation of kitchen equipment, utensils, and workstations. Competences in following recipes and portioning ingredients accurately are essential for maintaining consistency in food preparation. Basic cooking techniques, such as knife handling, chopping, slicing, and dicing, enable them to assist with food preparation tasks efficiently. Additionally, food preparation helpers need strong organizational abilities to prioritize tasks, manage inventory, and maintain a well-stocked kitchen. Effective communication and teamwork skills are also important for collaborating with kitchen staff and following instructions from chefs and cooks. Adaptability and the ability to work quickly and efficiently in a fast-paced environment are further qualities that contribute to success in this role.

Work prospects and opportunities for PWDs

By embracing inclusivity, providing reasonable accommodations, and fostering a supportive workplace culture, the culinary industry can benefit from the diverse talents and perspectives of individuals with disabilities working as food preparation helpers. This not only enhances the overall work environment

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but also contributes to the success and innovation of the business. Some accessible work roles opportunities for PWDs in food preparation may include:

- assisting with basic food preparation tasks, such as chopping vegetables, measuring ingredients, and assembling dishes,
- assisting with plating and garnishing dishes to enhance their visual appeal.
- testing and providing feedback on recipes to ensure they meet quality and taste standards,
- kitchen cleaning and maintenance, including washing dishes,
- cleaning surfaces, and organizing supplies,
- preparing and portioning ingredients for use in cooking, baking, or meal assembly
- washing dishes, utensils, and kitchen equipment, and ensuring sanitation standards are met
- packaging food items and labeling products for distribution.
- engaging in customer service roles such as taking orders, handling inquiries, or working at a front-of-house counter.

Potential adaptations for PWDs working as food preparation helpers may include modified workstations to be wheelchair-accessible as well as tools with ergonomic designs for persons with physical disabilities. Use of large-print labels, tactile markers, high-contrast tools and Implement auditory cues for timers and alarms to accommodate persons with visual impairments. Utilize visual or vibrating alerts for timers and alarms, and clear visual communication methods, such as written instructions or visual cues for persons with hearing impairments. Provide visual aids, written instructions, simple tasks and consistent routines for persons with cognitive disabilities.

Formal education (by country)

Greece	There are no formal education requirements for becoming a food preparation helper. Food preparation helpers typically need only a high school diploma (NQF Level 4 and EQF Level 4) and they learn through on-the-job training. Some employers may prefer candidates who have completed a culinary arts training program at a Vocational Training Institute (NQF Level 5 and EQF Level 5) or hold a Vocational School (EPAS) certificate (NQF Level 4 and EQF Level 4). Recommended educational paths include: Culinary art Vocational Schools (EPAS): https://www.dypa.gov.gr/magirikhs-texnhs Culinary art Vocational Training Institutes (IEK): http://www.iekdomi.gr/dimosia-iek.php
Italy	Formal qualifications are not usually required to work as a food preparation helper. The conclusion of the compulsory ten-year education or the first two years of education of upper secondary school (NQF Level 2 and EQF Level 2) or general upper secondary school

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	certificate (NQF Level 4 and EQF Level 4) combined with on-the-job training is generally enough for entry-level work as a Food preparation helper. Some employers may prefer candidates who have a specialized education in the field. After the lower secondary school diploma (NQF:1, EQF: 1), several options are available: - Within the Vocational Education and Training (IeFP) system the three years Catering Operator course (Specialization: Food preparation and dish preparation) allows to achieve the skills to carry out with limited autonomy and responsibility, activities relating to the preparation of raw materials and semi-finished food products and the creation of simple cooked dishes and set up. The Catering Operator certificate gives access to the one year Kitchen Technician course. This course allows the individual to achieve the skills to intervene, autonomously, in activities related to the preparation of meals, collaborating in the identification of the necessary resources, the operational organization of the work phases, the improvement of the service and its evaluation. - Within the Professional Education system the 5 years Food and Wine course (NQF:4, EQF: 4) enables students to acquire technical-practical, organizational and management skills in the design, offer and marketing of food and wine products and services and hotel hospitality.
Cyprus	In Cyprus, becoming a food preparation helper typically does not require formal education. These helpers usually need only a high school diploma (which corresponds to NQF Level 4 and EQF Level 4) and gain skills through on-the-job training.
Portugal	In Portugal, the path to becoming Food preparation helper professional, generally involves a combination of formal education, practical training and professional experience. However, specific requirements may vary depending on the employer and type of establishment. Food preparation helpers typically need only a high school diploma (NQF Level 4 and EQF Level 4). Vocational training in culinary arts can be advantageous in Portugal and is accessible through Vocational Schools (NQF Level 4 and EQF Level 4) or Vocational Training Institutes (NQF Level 5 and EQF Level 5). These institutions offer programs tailored to culinary education, providing valuable skills and knowledge in the field. Options for Culinary Training in Portugal: Practical courses for chefs and food preparation helper • Estoril Hotel and Tourism Institute - https://escolas.turismodeportugal.pt/escola/estoril/

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	• Lisbon School of Hospitality and Tourism - https://www.eshte.pt/ Portugal tourism schools - https://escolas.turismodeportugal.pt/en/escola/lisboa/ • School of Hospitality and Tourism of Porto - https://www.esht.ipp.pt/
Spain	No specific training is required but having a high school diploma or equivalent (EQF 3) may be beneficial. In addition, many companies require you to take a food safety course and obtain a certificate that proves you can handle food safely. These courses are common in the restaurant industry. Technician in elaboration of food products https://www.educaweb.com/estudio/titulacion-tecnico-elaboracion-productos-alimenticios/
Belgium	In Belgium, there are no formal qualifications required to work as a food preparation helper. Although the conclusion of the compulsory ten-year education or the first two years of education of upper secondary school (NQF Level 2 and EQF Level 2) or general upper secondary school certificate (NQF Level 4 and EQF Level 4) combined with on-the-job training is generally necessary for entry-level work as a Food preparation helper. Some employers may prefer candidates who have a specialized education in the field. After the lower secondary school diploma (NQF:1, EQF: 1), several options are available: 3rd Grade SO Large kitchen - *BSO* Hotel - *TSO* Restaurant and kitchen - *BSO* 7th Specialization Year of BSO Cantine Cook dual Speciality restaurant World gastronomy DBSO Large kitchen cook *(modular) (modular)* Cook *(modular) (modular)* Cook dual Apprenticeship Large kitchen cook Cook Cook dual BuSO Community Restoration - *BuSO Training Form 4* Large kitchen - *BuSO Form Training 4* Hotel - *BuSO Form 4* Cook dual - *BuSO Training Form 4* Restaurant and kitchen - *BuSO Training Form 4*

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	Specialty restaurant - *BuSO Training Form 4* World gastronomy - *BuSO Training Form 4* Syntra training courses Restaurant owner Secondary adult education Large kitchen manager Hotel Hotel company Kitchen manager Cook VDAB training courses Find out if there is a training course on the VDAB website.

Career Progression

Movement into other occupations within food preparation and service, such as cook or waiter, is possible with further training and experience. Individuals may also move into shift supervisor and management positions.

Employment trends

The food services industry continues to show promising prospects, while faces challenges such as labor shortages, advancements in kitchen automation, globalization of cuisine, demand for healthier food options, as well as supply chain disruptions, and changing consumer preferences. As restaurants and other food establishments expand, they may need more kitchen help. According to Cedefop job prospects indicator, future job prospects for food preparation helpers in EU27 over the period 2022-2035 is 73. This score means that there will be more job openings than the number of current jobs in the occupations (high job prospects). The role of food preparation helpers faces a low to moderate risk of automation due to the nature of their tasks, which often involve manual and repetitive activities. While advancements in technology, such as robotics and automated kitchen equipment, have the potential to streamline certain aspects of food preparation, such as chopping vegetables or portioning ingredients, there are limitations to full automation in the culinary industry. Many food preparation tasks require dexterity, judgment, and sensory skills that are challenging to replicate with current automation technologies. Additionally, the culinary arts emphasize creativity, innovation, and the human touch in food preparation, aspects that are difficult to automate. Overall, despite the automation possibilities of some specific tasks the human element and skill set required for many aspects of the job are likely to remain essential, creating new career opportunities.

Resources (by country)

General	U.S. Bureau of labor statistics. Occupational Outlook Handbook: Food preparation workers. https://www.bls.gov/ooh/food-preparation-and-serving/food-preparation-workers.htm O*NET OnLine. https://www.onetonline.org/link/summary/35-2021.00 Go2HR. Kitchen Helper. https://www.go2hr.ca/career-summary/kitchen-helper CLIMB. https://climbtheladder.com/kitchen-helper/

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	Top 20 Jobs for People with Learning Disabilities in 2023. https://mydisabilityjobs.com/jobs-for-people-with-learning-disabilities/ European Commission – ESCO https://esco.ec.europa.eu/en/classification/occupation?uri=http://data.europa.eu/esco/isco/C9412 Cedefop https://www.cedefop.europa.eu/en/tools/skills-intelligence/occupations?occupation=9.94#1
Greece	Panhellenic Federation of Restaurant & Related Professions https://www.poese.gr/ Hellenic Food Authority (EFET) https://www.efet.gr/index.php/el/
Italy	Federazione Italiana Cuochi www.fic.it Gambero Rosso Mensile www.gamberorosso.it/mensile/ Panorama Chef panoramachef.it Ristorazione Italiana Magazine www.ristorazioneitalianamagazine.it
Cyprus	Cyprus Chefs Association (CCA):https://cypruschefsassociation.com/
Portugal	Ajudante de cozinha: Saiba tudo sobre esta profissão aqui (guiadasprofissoes.info)
Spain	General information about this job: https://es.indeed.com/orientacion-laboral/buscar-trabajo/perfil-ayudante-cocina Federation of cook and confectioners of Spain: https://facyre.com/
Belgium	CEDEFOP Belgium Guidance System in Belgium (Flanders) https://www.onderwijskiezer.be/v2/beroepen/beroep_detail.php?beroep=190 https://competent.vdab.be/competent/release/current/occupationalprofile/OP-681

Fundraising Consultant

Related professions

Development Officer/Fundraiser, Grants Manager/Grant Writer, Donor Relations Manager, Nonprofit Consultant, Campaign Manager.

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Working Conditions

FUNDRAISING CONSULTANTs provide expertise and guidance to organizations, nonprofits, or individuals seeking to raise funds for specific projects, campaigns, or charitable causes. Their primary role is to develop effective fundraising strategies to secure financial support for missions and programs, advise on donor engagement, and help clients achieve their financial goals.

Responsibilities, knowledge, competences and skills, expected results

Core Activities and Tasks

Fundraising consultants' core activities include conducting research to identify potential donors and funding sources, creating fundraising plans tailored to the organization's needs and goals, and providing guidance on donor cultivation and stewardship. Fundraising consultants may also assist with writing grant proposals, soliciting donations from individuals and corporations, and organizing fundraising events. They collaborate closely with organizational leadership and staff to align fundraising efforts with overall strategic objectives and ensure compliance with regulatory requirements. Additionally, fundraising consultants may provide training and capacity-building support to empower organizations to sustainably raise funds and diversify their revenue streams. Overall, they play a crucial role in helping organizations achieve their fundraising targets and fulfill their missions effectively.

Knowledge, competences, and skills

Fundraising consultants possess a deep understanding of fundraising principles, enabling them to develop strategic fundraising plans tailored to the unique needs and objectives of each client. They demonstrate proficiency in research and analysis to identify potential funding sources, assess donor capacity, and evaluate fundraising opportunities. Additionally, fundraising consultants possess expertise in grant writing, proposal development, and fundraising event management, as well as knowledge of relevant laws, regulations, and ethical standards governing fundraising activities. Strong communication and interpersonal skills, networking and negotiation allow fundraising consultants to build relationships with donors, cultivate donor loyalty, and effectively convey the organization's mission and impact. Leadership, project management, and problem-solving skills further enable them to lead fundraising initiatives, navigate challenges, and achieve fundraising goals effectively.

Work prospects and opportunities for PWDs

Fundraising consulting offers a dynamic and potentially flexible career path encompasses a range of roles and responsibilities that can be adapted and suitable for individuals with various disabilities. Here are various work roles within fundraising consulting that PWDs might consider:

- Researching and writing grant proposals to secure funding for organizations.
- Developing comprehensive fundraising campaigns, including planning, implementation, and evaluation.
- Analyzing fundraising data to identify trends, donor behaviors, and areas for improvement.
- Building and maintaining relationships with clients, understanding their needs, and providing tailored fundraising solutions.
- Advising organizations on making their fundraising practices more inclusive, considering diverse audiences, including those with disabilities.

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- Planning and executing fundraising events, from small gatherings to large-scale galas.
- Building connections within the community, fostering partnerships, and increasing awareness of fundraising initiatives.

Fundraising Consultants with physical disabilities can thrive with accommodations like screen readers, Braille displays, and voice recognition software for efficient communication and data analysis. Advanced assistive technologies like speech-to-text software enhance communication. New work forms like remote working, platform work and flexible schedules offer flexibility, reduce commuting barriers, and enable them to work in comfortable environments tailored to their specific needs. This enhances their work-life balance and overall job satisfaction, resulting in more productive and motivated fundraising efforts. Fundraising consulting often involves client interactions, strategy development, and research, which can be done remotely. This flexibility can accommodate various disabilities and work preferences. Many fundraising tasks related to communication, research, and data analysis can be facilitated through adaptive technologies, accessible communication methods and tools that accommodate different abilities. The use of online platforms for networking, building relationships, and promoting fundraising campaigns can help to overcome physical barriers to in-person networking.

Formal education (by country) [7]

Greece	There are no formal education requirements for becoming a fundraising consultant. However it is strongly recommended they have earned a degree in economics, social sciences, business administration, international relations or marketing and communication. Examples of such academic programmes are given below. Nevertheless, whatever the academic background of the candidate, they may be able to work in fundraising, as long as they have developed required skills and competences, through other paths (e.g. volunteer work within nonprofit organizations, other relevant certifications). • Bachelor's degree in marketing and communication Department of marketing & communication Athens university of economics and business • Bachelor's degree in marketing and communication Department of Organization Management, Marketing and Tourism International Hellenic University • Bachelor's degree in marketing Department of commerce and marketing Technological educational institution of Crete • Bachelor's degree in business administration

[7] Please note that program availability and codes may be subject to change, so it is advisable to refer to the official websites of the universities for the most up-to-date information.

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	University of Patras University of Western Attica University of Thesally Athens University of Economics and Business International Hellenic University University of the Aegean University of Piraeus • Bachelor's degree in Economics University of Piraeus Athens University of Economics and Business University of West Macedonia University of Peloponnese University of Ioannina • Bachelor's degree in International Relations National and Kapodistrian University of Athens Aristotle University of Thessaloniki University of Piraeus • Bachelor's degree in political sciences University of Crete National and Kapodistrian University of Athens Aristotle University of Thessaloniki Panteion University of Social and Political Sciences • Bachelor's degree in Sociology University of Crete Panteion University of Social and Political Sciences University of the Aegean
Italy	To embark on a career as a Fundraising Consultant, a formal education is not a strict requirement. However, having relevant educational qualifications can provide a

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	strong foundation and enhance career prospects. In particular, developing a diverse knowledge and skill set, encompassing fundraising techniques, data analysis, effective communication, marketing, and financial management, is pivotal. Therefore, for individuals aspiring to launch a career as a Fundraising Consultant, the recommended educational route involves the pursuit of a bachelor's degree, ideally in fields like Nonprofit Management, Business Administration, or Communications. This can be complemented with practical experience through internships and volunteer work within nonprofit organizations. For enhanced qualifications, advanced degrees in Nonprofit Management or certifications like the Certified Fundraising Executive (CFRE) can be considered. Here's an overview of the recommended education and university programs available in Italy: University Bachelor's Programs (Laurea Triennale, NQF: 6, EQF:6): ● Economia e Gestione Aziendale (L-18) ● Scienze della Comunicazione (L-20) University Master's Programs (Laurea Magistrale, NQF:7, EQF:7): ● Economia e Management (LM-77) ● Comunicazione per le Organizzazioni (LM-59) To the basic university education it might be useful to add specific university masters, or VET programs. University masters: Master in fundraising dell'Università di Bologna, sede di Forlì. Manager delle imprese sociali e del non profit, SDA Bocconi, Milano. Master in Fundraising, Comunicazione e Management per gli enti ecclesiastici e le organizzazioni religiose, Italian Adventist University, Firenze. Master di I livello in "Promotori del dono", Università degli Studi dell'Insubria e la Fondazione Provinciale della Comunità Comasca – onlus.

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	Please note that program availability and codes may be subject to change, so it is advisable to refer to the official websites of the universities for the most up-to-date information. A useful website to do it is Universitaly. Non University courses: Scuola di Fundraising di Roma, Roma. Fundraising School di Bertinoro, Forlì. ASVI Social Change, Roma. Other programs: 4Good Academy, online. Confini Online, tutta Italia. Centrale Etica, tutta Italia. Start up fundraising, Milano. Atlantis – Non Profit Strategic Center, Milano Ong 2.0, online.
Cyprus	In Cyprus, while there are no specific bachelor's degrees or diplomas exclusively focused on becoming a fundraising consultant, there are related fields of study and professional development courses that can provide the necessary skills and knowledge for this career: Recommended educational paths include: Economics and Finance Degree at EUC: https://euc.ac.cy/en/programs/bachelor-economics-finance/#:~:text=URL%3A%20https%3A%2F%2Feuc.ac.cy%2Fen%2Fprograms%2Fbachelor
Portugal	Although there is no specific course to become a fundraising consultant, an academic background in related areas can be valuable. A course or degree in Management, Communication, Marketing, Public Relations, Social Sciences or related fields can be a good foundation. Communication: A course in Communication can help develop essential written and verbal communication skills, which are crucial for fundraising.

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	Marketing: A degree in Marketing can provide a solid understanding of marketing and promotion strategies, relevant to the promotion of causes and non-profit organizations. Management or Administration: Undergraduate courses in Management or Business Administration can provide a foundation in project management, budgeting and leadership, valuable skills to manage fundraising campaigns. Social Sciences: Some fundraising consultants have a background in Social Sciences or related fields, which can help to understand the dynamics of non-profit organizations and social problems. Psychology or Sociology: Knowledge in Psychology or Sociology can be beneficial to understanding human behavior and the motivations behind donations. Public Relations: A degree in Public Relations can help develop relationship and reputation management skills, useful in building partnerships and relationships with donors. Universities and schools in Portugal offering courses and programmes that may be relevant to those who wish to pursue a career in fundraising or work in the non-profit sector: · Universidade Católica Portuguesa (UCP) - UCP offers courses in the areas of Nonprofit Organizations Management and Entrepreneurship - https://www.ucp.pt/pt-pt · NOVA University of Lisbon: Nova SBE (School of Business and Economics) offers undergraduate and graduate programs in areas such as Business Management and Marketing, which may be relevant to the career of a fundraising consultant - https://www.novasbe.unl.pt/pt/ · University of Porto: The Faculty of Economics of the University of Porto offers courses related to Management and Marketing that can be applied to the non-profit sector and fundraising. - https://www.up.pt/portal/pt/ · Institute of Social and Political Sciences (ISCSP): offers Social Sciences courses that may be relevant to understand the dynamics of non-profit organizations - https://www.iscsp.ulisboa.pt/pt Coimbra Education School (ESEC): offers courses in the area of Management of Organizations and Social Projects. - https://www.esec.pt/
Spain	specific training and experience in areas related to fundraising and fundraising is required. Master's Degree in Social Economy

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	https://www.educaweb.com/estudio/titulacion-master-oficial-economia-social/
Belgium	In Belgium to pursue a job as Fundraising Consultant specific training and experience in the field may be required. The possible educational background for this career is the following: HO - Graduate HR support Social work Social - cultural work Syndic (Union) work HO - Bachelor's Family Sciences *(Professional Bachelor - HO)* Social safety *(Professional bachelor - HO)* Ortho-pedagogy : Applied youth criminology *(Professional bachelor - HO)* Social work : Arts and culture mediation *(Professional bachelor - HO)* Social work : Social Work *(Professional Bachelor's - HO)* Social work : Social advice *(Professional bachelor - HO)* Social work : Staff work *(Professional bachelor - HO)* Social work : Socio-cultural work *(Professional Bachelor - HO)* Social work : without specific specialisations *(Professional Bachelor - HO)* Social Readaptation Sciences *(Professional Bachelor - HO)* Applied psychology: Occupational and organizational psychology *(Professional bachelor - HO)* Applied psychology: Clinical Psychology *(Professional Bachelor - HO)* Applied psychology: School psychology and pedagogical psychology *(Professional bachelor - HO)* Applied psychology: without specific specialisations *(Professional Bachelor - HO)* HO - Master Social Work *(Master - HO)* Social Work and Social Policy *(Master - HO)* HO - Postgraduates Social legislation and payroll *(Postgraduate - HO)* Secondary adult education Intercultural staff member VDAB training courses Find out if there is a training course on the VDAB website.

Career Progression

The career of Fundraising consultants usually begins with an entry-level position within nonprofit organizations or consulting firms to gain practical experience and build their network. In these entry-level roles, they learn the intricacies of fundraising, donor relations, and campaign management. As they gain expertise and establish a track record of successful projects, fundraising consultants often transition into more specialized roles. They may focus on particular sectors like healthcare, education, or arts and culture, honing their skills to cater to specific client needs. Networking becomes paramount, as consultants build relationships with potential clients, philanthropic organizations, and high-net-worth

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individuals. Establishing a personal brand and reputation for delivering results is crucial for career growth. Seasoned fundraising consultants may also take on leadership positions within firms or start their own consulting practices, offering a wealth of experience to guide nonprofits in achieving their financial goals. Continuous learning and adaptation to evolving fundraising strategies are essential for a successful and fulfilling career as a fundraising consultant.

Employment Trends

The job prospects for fundraising consultants in Europe are generally positive, reflecting the increasing demand for professional fundraising expertise in the nonprofit sector. Europe has a vibrant and diverse nonprofit sector comprising charitable organizations, foundations, NGOs, and social enterprises. As these organizations strive to expand their programs and initiatives, there is a growing need for fundraising consultants to help them secure the financial resources necessary for their operations and projects. The digitalization of fundraising practices, including online giving platforms, social media campaigns, and data analytics tools, has created new opportunities and challenges for fundraising consultants.

Resources (by country)

General	European Union funding, grants, subsidies European Fundraising Association efa-net.eu EFA Nonprofit Pulse Report Association of Fundraising Professionals (AFP) afpglobal.org Certified Fund Raising Executive https://www.cfre.org/ Social Economy Europe www.socialeconomy.eu.org Zippia https://www.zippia.com/fundraising-consultant-jobs/
Greece	Top 10 Crowdfunding Platforms In Greece https://whydonate.com/en/blog/crowdfunding-platforms-in-greece/ Top Nonprofit & NGO Companies in Athens, Greece https://www.glassdoor.com/Explore/top-nonprofit-and-ngo-companies-athens_IS.4,21_ISEC10018_IL.32,38_IM1017.htm
Italy	Associazione Italiana Fundraiser www.assif.it Fundraising Italia www.fundraising.it Festival del Fundraising https://www.festivaldelfundraising.it/ Forum Terzo Settore www.forumterzosettore.it Forum per la Finanza Sostenibile finanzasostenibile.it
Cyprus	CNL - Charities and Voluntary Organizations in Cyprus: https://www.icnl.org/research/library/cyprus_cycharities/
Portugal	Feedback: Os primeiros ensinamentos de um processo de angariação de fundos (viseeon.pt)
Spain	NGO Fundraising Guide: https://www.laescuelitadeong.com/guia-de-captacion-de-fondos-para-ong-i/ Fundraising Spanish Association: https://www.aefundraising.org/wp-content/uploads/2017/05/Manual-Buenas-Pr%C3%A1cticas-Face-to-Face.pdf
Belgium	CEDEFOP Belgium Guidance System in Belgium (Flanders) https://www.onderwijskiezer.be/v2/beroepen/beroep_detail.php?beroep=128&var=VDAB&detail=4

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	https://competent.vdab.be/competent/release/current/occupationalprofile/OP-636

Handcraft and 3D Printing Worker

Related professions

3D Modeler, Prototyping Specialist, Artisan or Craftsperson, Design Consultant.

Working Conditions

HANDCRAFT AND 3D PRINTING WORKERs mainly work in the manufacturing sector. They fulfil various roles in the design, production, maintenance and decoration of precision and musical instruments, jewellery, pottery, wood, leather and textile items, and printed products such as books and magazines. Jobs within this group include musical instrument makers, potters, jewellery workers, glass makers and cutters, decorative painters, printers, and binding workers. They use both traditional handcrafting techniques and modern 3D printing technology to create various objects and products. They may work in various settings, including workshops, factories, studios, or laboratories. These environments can range from small-scale artisanal workshops to large-scale manufacturing facilities. Depending on the tasks involved, handcraft and 3D printing workers may need to stand or sit for long periods, manipulate tools or machinery, and perform repetitive movements. They operate specialized equipment such as 3D printers, laser cutters, CNC machines, or hand tools depending on the nature of their work. They may collaborate with designers, engineers, artisans, or other professionals to bring creative projects to life. They often engage in creative and innovative work processes, experimenting with different materials, techniques, and designs in dynamic and evolving work environments.

Responsibilities, knowledge, competences and skills, expected results

Handcraft and 3D printing workers engage in a variety of core activities and tasks related to the creation, fabrication, and production of handcrafted or digitally manufactured objects. These tasks may include designing and prototyping products using computer-aided design (CAD) software, operating 3D printers or traditional hand tools to fabricate prototypes or final products, performing quality control checks to ensure accuracy and precision, and finishing or post-processing objects to achieve desired aesthetics. Additionally, handcraft and 3D printing workers may collaborate with designers or clients to understand project requirements, troubleshoot technical issues, and iterate on designs to meet specifications.

Knowledge, competences, and skills

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Handcraft and 3D printing workers should have a deep understanding of design principles, materials properties, and manufacturing processes relevant to their craft or industry. The work of handicraft workers also seems to require decent digital skills, especially related to the use of specialised software. Proficiency in computer-aided design (CAD) software and 3D modeling is essential for creating and modifying digital designs for fabrication. Handcraft skills such as sculpting, carving, or molding may be required for traditional crafting techniques, while technical skills in operating and troubleshooting 3D printers and related machinery are critical for additive manufacturing processes. Attention to detail, precision, and craftsmanship are important for producing high-quality, accurate, and aesthetically pleasing objects. Additionally, problem-solving abilities, adaptability to new technologies and techniques, and effective communication skills are essential for collaborating with colleagues, clients, and other stakeholders throughout the design and production process. The adoption of new technologies - including digital and 3D printing and product promotion via social media- will drive changes in the skills required of handicraft and printing workers in the future. Sustainability concerns, prompting the use of new materials and the design of recyclable and reusable products will also affect the skills required by handicraft and printing workers.

Work prospects and opportunities for PWDs

Handcrafting and 3D printing offer a range of opportunities for PWDs to engage in creative and meaningful work. Assistive technologies and proper accommodations, including adjustable workstations, voice-activated software and 3D modeling applications with accessibility features like specialized grips or assistive devices make this position accessible to people with different types of disabilities. Moreover, new work forms like remote working or job sharing can provide flexibility, empowering persons with disabilities to succeed in this role.
Some work roles within handcrafting and 3D printing that can be adapted to accommodate different abilities may include:

- Adaptive Product Designer: Designing products with a focus on adaptability and inclusivity, considering the needs of individuals with various disabilities.
- Custom Jewelry Artisan: Crafting unique and personalized jewelry items.
- Textile Artist: Creating textile-based artworks, including quilting, embroidery, or fabric sculpture.
- 3D Printing Specialist: Operating and maintaining 3D printers, troubleshooting technical issues, and overseeing the printing process.
- Sculpting, pottery, or woodworking
- Braille Artisan: Creating artwork or decorative items incorporating Braille elements for individuals with visual impairments.
- Sensory Toy Creator: Designing and crafting toys that cater to sensory needs, benefiting individuals with sensory processing disorders or developmental disabilities.

Formal education (by country) [8]

Greece	Formal qualifications are not usually required to work as a Handcraft and 3D Printing Worker in Greece. General upper secondary school leaving certificate (NQF Level 4 and EQF Level 4) and on-the-job training or attendance of specialized courses is generally

[8] Please note that program availability and codes may be subject to change, so it is advisable to refer to the official websites of the universities for the most up-to-date information.

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	considered sufficient for entry-level work as a Handcraft and 3D Printing Worker. Examples of such courses are: • Product Design & 3D Printing Specialization, Training programme, National and Kapodistrian University of Athens • 3D Printing Applications (Product Design / Prototypes), E-learning programme, University of West Attica • From 3D modeling to 3D printing, Lifelong Learning Center, University of West Macedonia • Technical engineer I & II Hellenic Center for Additive Manufacturing A number of Bachelor's degrees (NQF Level 6 and EQF Level 6) have been offering various 3D printing related courses (ε.γ. 3D construction, 3D visualizations and prints) • Bachelor's degree in product and systems design engineering, University of the Aegean • Bachelor's degree in Visual Arts, Higher School of Fine Arts • Bachelor's in Aerospace Science and Technology, National and Kapodistrian University There are few postgraduate programmes in Greece with a focus on this subject such as the following (NQF Level 7 and EQF Level 7): • MSc Advanced Product Design Engineering & Manufacturing, University of West Attica • MSc in Strategic Product Design Programme, International Hellenic University
Italy	There are no specific rules or laws governing the profession, therefore no educational qualifications, registrations or minimum periods of compulsory professional practice are required. At the same time and despite the fact that to work as a Handcraft and 3D Printing Worker, practical skills and experience are highly valued in this field, having relevant educational qualifications can provide a strong foundation and enhance Handcraft and 3D Printing Worker prospects. Here are some recommended options: Secondary School Programs (Scuole Superiori): Liceo Artistico (Artistic High School, NQF:4, EQF:4) University Bachelor's Degree Programs (Laurea Triennale, NQF:6, EQF:6):

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	Design del Prodotto (L-4) Design del Prodotto e della Comunicazione (L-4) University Master's Degree Programs (Laurea Magistrale,NQF:7, EQF:7): Design (LM-12) Design del Prodotto (LM-12) Before choosing a program, it's advisable to check the specific details and curriculum of the programs offered by individual universities. A useful website to do it is Universitaly.
Cyprus	There are currently no specific bachelor's degree programs for Handcraft and 3D Printing Workers in Cyprus. However, for individuals interested in related fields, there are several bachelor's degree programs (EQF6) in computer science available in Cyprus, which could be beneficial for developing skills applicable to 3D printing and other technology-driven crafts. Some of these programs include: Recommended educational paths include: Bachelor of Science in Computer Science at European University Cyprus (EUC): https://euc.ac.cy/en/programs/bachelor-computer-science/ Bachelor of Science in Computer Engineering at the University of Nicosia:https://www.bachelorsportal.com/search/bachelor/computer-sciences/cyprus
Portugal	There are no specific training/graduation courses to train Craftsmen and 3D printer operators. A secondary school diploma can open up more opportunities in the future. These qualifications align with both NQF Level 4 and 5 and EQF Level 4 and 5. The best way to become a 3D printer operator is through specific training in 3D printing technology. Courses and workshops provided by technical educational institutions or specialized companies present valuable learning opportunities for skill development in various fields.. In addition to formal training, it is important to gain practical experience working with 3D printers. This can be done through internships, jobs or personal projects. It is important to have an update with the latest trends and technologies in 3D printing and crafts, attending conferences and professional associations. Some relevant training areas for those concerned: Technical Courses in 3D Printing 3D Design and Modeling Courses Certification Programs in 3D Printing

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	Craft Courses Workshops and Practical Training In Portugal, at the undergraduate level, schools and universities typically do not provide specific courses tailored for handcraft and 3D printer operators. Therefore, the most effective approach to self-education involves seeking online courses associated with crafts and 3D printing. Design and Technology Schools: Some design and technology institutes and schools in Portugal may offer courses or workshops related to 3D printing and 3D design. These schools may be located in urban areas such as Lisbon and Porto. Incubators and Fab Labs: Check for technology incubators or Fab Labs (manufacturing labs) in your area. These locations often provide access to 3D printers and training programs for the community. Online Courses: Apart from local choices, exploring online courses available on learning platforms like Coursera, Udemy, or edX is advisable. These platforms frequently offer courses covering 3D printing and 3D design, broadening the scope of accessible learning opportunities in these domains. Events and Workshops: Events, fairs and workshops related to 3D printing technology and crafts are great opportunities to learn and meet professionals in the area.
Spain	In many cases, a specific formal qualification is not required, and experience and practical skills are more important. Masters and courses in 3D printing https://quecarreraestudiar.es/tecnico-en-impresion-3d-que-estudiar-y-donde-hacerlo/#Cursos_profesionales
Belgium	There are no specific formal qualifications required in Belgium to pursue a career of Handcraft and 3D Printing Worker. The optional competencies contain competencies specific to a copy center - reprography employee. **Relevant Sectors:** Communication, media and multimedia: Graphic industry **Areas of interest:** production Technology Trade and sales **VDAB training courses** Find out if there is a training course on the VDAB website.

Career Progression

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A Handcraft and 3D printing worker with expertise in 3D modeling and design, can work as Design Specialist (creating original designs for 3D printing, customizing existing designs, or collaborating with clients and designers to develop unique products). With increased experience and leadership capabilities, may progress to a supervisory or managerial role overseeing the entire production process, for example working as Production Supervisor/Manager. This involves managing a team, coordinating projects, ensuring quality control, and optimizing workflow. At the same time, some Handcraft and 3D printing workers choose to start their own businesses, leveraging their skills in 3D printing and handcrafting to offer custom products, design services, or specialized fabrication solutions.

Employment Trends

Handicraft and printing workers, who mainly work in the manufacturing sector, account for around 0.5 per cent of all employment in the EU. Cedefop's Skills forecast indicates that overall employment for handicraft and printing workers is expected to increase quite much (by about 13 per cent) over the period 2022 to 2035. This will add up to the loss of employment during the pandemic when employment fell by almost 8 per cent between 2019 and 2021. 3D printing technology has evolved rapidly, offering new possibilities for manufacturing customized, complex, and innovative products. As a result, there is increasing demand for skilled 3D printing workers who can design, operate, and maintain 3D printers and related equipment. Overall, the job prospects for handcraft and 3D printing workers in Europe are promising, driven by evolving consumer preferences, technological advancements, innovation initiatives, and diverse applications across industries, including automotive, aerospace, healthcare, architecture, fashion, and consumer goods. As demand for handmade craftsmanship and digital fabrication continues to grow, skilled artisans and 3D printing specialists are likely to find ample opportunities for employment and career advancement. According to Cedefop forecasts, taking into account projected job destruction and job replacement demands, an estimated 387 thousand job openings for handicraft and printing workers will need to be filled between 2022 and 2035.

Resources (by country)

General	CEDEFOP Handicraft and printing workers: skills opportunities and challenges (2019) 3DPrint.com 3dprint.com ALL3DP all3dp.com 3ders.org www.3ders.org
Greece	Hellenic Centre for Prosthetic Manufacturing (HCPC)/ Foundation for Research and Technology - Hellas (FORTH) https://www.forth.gr/el/news/show/&tid=1957 AM4GR https://am4gr.com/ Keramik https://www.keramik.gr/
Italy	IPCB- CNR https://www.ipcb.cnr.it/ Associazione per il disegno industriale www.adi-design.org/homepage.html

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	3Ditaly www.3ditaly.it 3D Printing Creative, New Business Media – Gruppo Tecniche Nuove
Cyprus	Cyprus Handicraft Service:https://www.cedefop.europa.eu/en/news/cyprus-training-programmes-young-traditional-handicraft-techniques Cyprus 3D Printing Newswire (EIN Presswire):
Portugal	Qual é a função de um técnico de impressão 3D? (universia.net)´ Impressão 3D em Portugal - Primeiros passos na Impressão (masterd.pt)
Spain	Spanish Association of Additive Manufacturing and 3D Technologies: https://www.addimat.es/
Belgium	CEDEFOP Belgium Guidance System in Belgium (Flanders) https://www.onderwijskiezer.be/v2/beroepen/beroep_detail.php?beroep=1574 https://competent.vdab.be/competent/release/current/occupationalprofile/OP-623

Hotel and Resort Clerk

Related professions

Front Desk Agent/Receptionist, Reservation Agent, Guest Service Agent, Concierge, Front Office Supervisor/Manager, Reservations Manager, Guest Relations Manager

Working Conditions

HOTEL AND RESORT CLERKs work in dynamic environments that often involve direct interaction with guests and coordination with various hotel departments. They typically perform a range of administrative and customer service duties to ensure smooth operations within a hotel or resort. They serve as the primary point of contact for guests and are responsible for delivering excellent customer service. Their role at the hotel front desk requires standing or sitting for extended periods, especially during peak check-in and check-out times. They often work in shifts to ensure round-the-clock coverage at the front desk or reception area. This means that clerks may need to work during the day, evenings, nights, weekends, and even holidays, as hotels and resorts operate 24/7. The hospitality industry operates in a fast-paced and often unpredictable environment, with fluctuating guest volumes, last-minute reservations, and unexpected events. While the role can be demanding, it offers opportunities for professional growth, skill development, and rewarding interactions with guests from diverse backgrounds.

Responsibilities, knowledge, competences and skills, expected results

Core Activities and Tasks

Hotel and resort clerks primarily work at the front desk of the hotel or resort, greeting guests upon arrival, checking them in and out, addressing their inquiries and requests, and processing reservations accurately and efficiently. They provide information about hotel amenities, local attractions, and services and they handle guest special needs or complaints. Hotel and resort clerks manage room assignments,

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allocate keys, and maintain guest records and billing information using computerized reservation systems and property management software. They also handle cash transactions, process payments, and reconcile daily financial reports. Additionally, hotel and resort clerks coordinate with other hotel departments, such as housekeeping and maintenance, to fulfill guest needs and ensure the cleanliness and functionality of guest rooms and facilities. Overall, their role is pivotal in creating a welcoming and hospitable atmosphere for guests while ensuring the smooth operation of front desk services.

Knowledge, competences, and skills

Hotel and resort clerks should combine hospitality knowledge, interpersonal skills, and administrative proficiency to deliver exceptional service and create memorable stays for guests. They must possess in-depth knowledge of hotel policies, procedures, and amenities to provide accurate information and assistance to guests. Strong communication skills, both verbal and written, are essential for interacting with guests, addressing inquiries, and resolving issues courteously and efficiently. Attention to detail is crucial for accurately processing reservations, handling payments, and maintaining guest records. Hotel and resort clerks also need digital skills and proficiency in computer systems and software applications for managing reservations, processing transactions, and generating reports. Customer service orientation, empathy, patience, and problem-solving, are essential for ensuring guest satisfaction and fostering positive experiences. Additionally, organizational skills, time management, and the ability to multitask effectively are critical for managing front desk operations in a fast-paced environment.

Work prospects and opportunities for PWDs

Hospitality industry can offer a range of opportunities for PWDs in various roles, including hotel and resort clerk positions. Hotel and Resort Clerks with disabilities can benefit from accommodations like accessible workstations and communication aids for effective guest interactions. Advanced assistive technologies, such as speech recognition software, screen readers etc. can aid in data entry. Additionally, flexible and adapted schedules can make this role more accessible, according to individual needs. Hotel and Resort Clerks with disabilities can equally be involved in all tasks, involving greeting guests, handling check-ins and check-outs, managing reservations, and providing information about hotel amenities and services, concierge, handling complaints, special requests as well as providing general assistance to guests. They can also engage in coordinating events and meetings held at the hotel or resort, managing logistics, and ensuring client satisfaction. Hotel and Resort Clerks with disabilities may also undertake responsibilities to ensure that the hotel or resort facilities are accessible to all guests, including those with disabilities. Conducting accessibility audits, implementing necessary modifications, and providing staff training on accessibility are potential roles.

Formal education (by country) [9]

Greece	The minimum educational standard for one to work as hotel clerk is holding a certificate from upper secondary education (NQF Level 4 and EQF Level 4) and also demonstrating good level of IT skills and knowledge of foreign languages. However, attendance of certain educational opportunities are strongly recommended: Vocational training diploma (post-secondary level – IEK) (NQF Level 5 and EQF Level 5)

[9] Please note that program availability and codes may be subject to change, so it is advisable to refer to the official websites of the universities for the most up-to-date information.

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	Tourism & Hospitality Business Technician (Reception Service - Floor Service - Merchandising) Vocational upper secondary school (EPAL) (NQF Level 4 and EQF Level 4) Employee of Tourism Enterprises Bachelor's degree (NQF Level 6 and EQF Level 6) Department of Tourism Studies, University of Piraeus Department of Tourism Economics and Management, University of the Aegean Department of Tourism Management, University of Patras Master's Degree (NQF Level 7 and EQF Level 7) MBA – Tourism Management, University of Piraeus Executive MBA in Tourism, International Hellenic University Management of Tourist Destinations & Businesses, University of Patras
Italy	Since there are no specific rules or laws governing the profession, to work as a Hotel and Resort Clerk, no educational qualifications, registrations or minimum periods of compulsory professional practice are required. Despite not legally required, and despite many of the skills required for this role can also be developed through on-the-job training and practical experience, formal education in hospitality or a related field can provide a foundation of knowledge to start working as a Hotel and Resort Clerk, and for career development. Additionally, specific hospitality structures may require or set as preferred requirements, secondary education and university programs related to the hospitality industry. Here are the secondary school programs and university programs available in Italy: Secondary School Programs (Scuola Secondaria Superiore, NQF:4, EQF:4): Istituto Tecnico per il Turismo Istituto Professionale Servizi per l'Enogastronomia e l'Ospitalità Alberghiera University Bachelor's Programs (Laurea Triennale, NQF:6, EQF:6): Economia del Turismo (L-33) Scienze del Turismo (L-15) Lingue e Culture per il Turismo (L-11) University Master's Programs (Laurea Magistrale, NQF:7, EQF:7): Management del Turismo (LM-49) Economia e Gestione del Turismo (LM-56) Lingue e Letterature per il Turismo e la Cultura (LM-37) Before choosing a program, it's advisable to check the specific details and curriculum of the programs offered by individual universities. A useful website to do it is Universitaly.
Cyprus	For those interested in a career as a Hotel and Resort Clerk in Cyprus, there are several relevant degree programs available that can provide the necessary skills and knowledge. These programs are generally aligned with the European Qualifications Framework (EQF6), ensuring a recognized standard of education within Europe. Recommended educational paths include: Hospitality and Tourism Management at European University Cyprus (EUC): https://euc.ac.cy/en/programs/bachelor-hospitality-and-tourism-management/#:~:text=,organization%20and%20international%20marketing%20strategies BSc in Hospitality Management at Alexander College:https://alexander.ac.cy/courses/undergraduate/bsc-hospitality-management/

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	Bachelor's Degree in Hotel Management at American College Cyprus: https://ac.ac.cy/programs-of-study/hotel-management-bachelors-degree/ Diploma in Hotel Management at American College Cyprus: https://ac.ac.cy/programs-of-study/hotel-management-diploma/#:~:text=,of%20study%20%E2%80%93%20Recognized%20diploma
Spain	To work as an employee in hotels and resorts, a specific formal degree is not always required, but training and qualifications may vary depending on the specific position and level of responsibility. Here you can find the different degrees related with this job: https://www.educaweb.com/carreras-universitarias/hosteleria-turismo-ocio/
Portugal	There are no specific regulations or legal requirements regarding qualifications, registrations, or mandatory professional experience for individuals seeking employment as a Hotel and Resort Clerk. However, most of the employers ask for a secondary school (NQF Level 4 and 5 and EQF Level 4 and 5), but many of the skills required for this role will be developed through on-the-job training and practical experience. Developing interpersonal skills such as empathy, effective communication and customer service is essential to success in the area. However, to increase the chances of being hired for this role and even progressing in your career, a common option is to seek professional training related to hospitality and tourism. Knowing foreign languages like English, Spanish or French can be a significant advantage. There are some undergraduate course options that may be relevant and provide a solid foundation for a career in the hotel and resort industry: Hospitality Management Tourism and Leisure Business Administration Management of Events and Hospitality Restaurant and Food and Beverage Management International Tourism Management In Portugal, specific training for hotel and resort clerks is usually offered by technical and vocational education institutions, hospitality schools, and not universities. Some of the major schools and institutions offering courses focused on this area include: · Estoril Hotel and Tourism School - https://www.eshte.pt/ · Lisbon Hotel and Tourism School - https://www.ephtl.edu.pt/pt Oporto Hotel and Tourism School - https://www.esht.ipp.pt/
Belgium	For hotel clerk position in Belgium a specific formal degree is not usually required, although qualifications and trainings may vary depending on the employer company and level of responsibility. Here is the list of relevant educational background for the following position: 3rd Grade SO Hotel - *TSO* Welcome and public relations - *TSO* Welcome and recreation - *BSO* Tourism - *TSO* Se-n-Se

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	Hotel management Public relations and relations Tourism and organisation Tourism and recreation BuSO Hotel - *BuSO Form 4* Welcome and public relations - *BuSO Form Training 4* Tourism - *BuSO Training Form 4* HO - Bachelor's Hotel Management *(Professional Bachelor - HO)* Secondary adult education Host/hostess in a tourist destination VDAB training courses Find out if there is a training course on the VDAB website.

Career Progression

Starting by entry-level positions, such as front desk clerk or guest service representative, professionals can develop foundational skills in customer service and gain experience to advance to positions with greater responsibility and specialization, such as front office supervisor, assistant manager, or front office manager, being responsible for the overall operations of the front desk, guest services, and coordination with other departments. Further advancement opportunities may include roles in hotel management, revenue management, or sales and marketing, Continuous learning, professional development, and acquiring relevant certifications can enhance career prospects and open doors to higher-level positions within the hospitality industry.

Employment Trends

Generally, the job prospects for hotel and resort clerks vary depending on factors such as tourism trends, economic conditions, and industry growth. As Europe is a popular tourist destination with millions of visitors each year, the outlook of the profession is positive due to the continuous growth of the tourism industry, creating a demand for hospitality services, including hotel and resort clerks, to accommodate the influx of travelers. Hotel and resort clerks can find employment in major cities, tourist hotspots, coastal resorts, mountain retreats, and rural areas across Europe. The diversity of locations ensures a wide range of job prospects for individuals seeking employment in the hospitality sector, both in seasonal and year-round positions. The hospitality industry has also shown significant resilience amidst the pandemic and is set for steady growth in the coming years. The tourism and retail industries are important contributors to the European economy, accounting for more than 13 per cent of gross value added in the EU economy in 2021. In 2022, the total number of travel and tourism jobs in Europe was roughly 8.5 percent lower than in 2019, the year prior to the onset of the coronavirus (COVID-19) pandemic. Overall, travel and tourism generated, directly and indirectly, around 34.76 million jobs in the region in 2022. According to Cedefop forecasts, future job prospects for customer clerks in EU27 over the period 2022-2035 is 68 (Scores above 60 means that there will be more job openings than number of current jobs in the occupation). The overall risk of automation for hotel and resort clerks may be moderate, involving certain routine tasks that may be susceptible to automation, such as data entry, reservation processing, and basic guest inquiries handled by chatbots or automated systems. However,

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there are aspects of their work that require human interaction, judgment, empathy and problem-solving skills that will continue to be essential in providing personalized guest assistance, ensuring sustainable career prospects for these professionals.

Resources (by country)

General	World Tourism Organization www.unwto.org Hotel Management Magazine, www.hotelmanagement.net Hospitalitynet www.hospitalitynet.org Hrc-international https://www.hrc-international.com/blogs/3/ljocje-embracing-the-future-of-hospitality-jobs%3A-trends-and-limitless-opportunities Cedefop https://www.cedefop.europa.eu/en/tools/skills-intelligence/occupations?occupation=4.42#1
Greece	Hellenic Chamber of Hotels https://www.grhotels.gr/en/ Greek Tourism Confederation (SETE) https://sete.gr/ Greek National Tourism Organization https://gnto.gov.gr/ Jobs in Greece https://www.jobs-greece.gr/JobAds/Receptionist-Jobs/all/EN/jobs-in-greece Glassdoor https://www.glassdoor.com/Job/greece-hotel-front-desk-jobs-SRCH_IL.0,6_IN100_KO7,23.htm
Italy	Touring club italiano https://www.touringclub.it/ Federalberghi www.federalberghi.it/index.aspx Associazione Italiana Confindustria Alberghi www.alberghiconfindustria.it
Cyprus	Cyprus Hotel Association (CHA): https://www.cyprushotelassociation.org/profile#:~:text=,of%20the%20Cyprus%20Hotel%20Association The Association of Cyprus Tourist Enterprises (ACTE - STEK): https://face2face.cyi.ac.cy/project-consortium/the-association-of-cyprus-tourist-enterprises-acte-stek
Spain	CEHAT - Spanish Confederation of Hotels and Tourist Accommodations: https://www.linkedin.com/company/confederaci%C3%B3n-espa%C3%B1ola-de-hoteles-y-alojamientos-tur%C3%ADsticos-cehat/?originalSubdomain=es
Portugal	
Belgium	CEDEFOP Belgium Guidance System in Belgium (Flanders) https://www.onderwijskiezer.be/v2/beroepen/beroep_detail.php?beroep=193 https://competent.vdab.be/competent/release/current/occupationalprofile/OP-438

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Information Security Engineer

Related occupations

Cybersecurity engineer, information systems security engineer, network security engineer, ICT security consultant, IT security expert, security architect, information technology security consultant, IT security advisor, system security administrator, cybersecurity architect.

Working Conditions

Information Security Engineers are responsible for protecting an organization's computer systems, networks, and data from security breaches, cyberattacks, and unauthorized access. They typically work in office settings, either within the IT department of an organization or as part of a dedicated cybersecurity team. Their work may also involve remote or on-site assignments, depending on the organization's needs. They may work standard office hours, but they may also be required to work evenings, weekends, or holidays, especially during security incidents or when implementing critical security updates or patches. They may also be part of an on-call rotation to respond to security emergencies outside of regular business hours. Information security engineers often work on projects related to implementing new security measures, upgrading existing systems, or responding to emerging threats. They may work independently or as part of a team, collaborating with colleagues from various departments to achieve project objectives within specified timelines and budgets. Depending on the organization's needs, they may be required to travel occasionally for meetings, training sessions, conferences, or on-site assessments.

Responsibilities, knowledge, competencies and skills, expected results

Core Activities and Tasks

Information Security Engineers' core activities and tasks encompass a range of responsibilities aimed at protecting an organization's digital assets and infrastructure. They design, implement, and maintain security measures such as firewalls, intrusion detection systems, and encryption protocols to safeguard against cyber threats and unauthorized access. Information Security Engineers conduct regular security assessments, vulnerability scans, and penetration tests to identify and mitigate potential risks and vulnerabilities. They monitor network traffic and security logs, analyze security incidents, and respond promptly to security breaches or anomalies. Additionally, they collaborate with other IT teams to ensure compliance with security policies and industry regulations, provide security awareness training to staff, and stay abreast of emerging threats and technologies to continually enhance the organization's security posture. Overall, their efforts are integral to maintaining the confidentiality, integrity, and availability of sensitive information and systems.

Knowledge, competences, and skills

Information Security Engineers should have a deep understanding of network security principles, cryptography, and secure system architecture. Proficiency in various security technologies, such as firewalls, intrusion detection/prevention systems, and endpoint security solutions, is essential. They should be skilled in conducting risk assessments, vulnerability assessments, and penetration testing to identify and mitigate security vulnerabilities. Strong analytical and problem-solving skills are needed to analyze security incidents, investigate breaches, and develop effective remediation strategies. Excellent

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communication and interpersonal skills enable them to collaborate with cross-functional teams, communicate security risks to stakeholders, and provide security awareness training to employees. Additionally, they should stay updated on the latest security trends, threats, and technologies through continuous learning and professional development.

Work prospects and opportunities for PWDs

PWDs can find rewarding careers in this dynamic and rapidly evolving field, playing a vital role in protecting organizations from cyber threats and ensuring the integrity of digital infrastructures. As organizations increasingly recognize the critical importance of cybersecurity in protecting sensitive data and systems, the demand for skilled professionals will grow. PWDs can bring diverse perspectives, innovative problem-solving skills, and a strong attention to detail to this field, making valuable contributions to safeguarding digital assets. With the right training, accommodations, and support systems in place, PWDs can excel in roles such as threat analysis, penetration testing, security architecture, and incident responding. Moreover, the growing emphasis on diversity and inclusion in the tech industry has enabled more inclusive hiring practices and supportive workplace environments for PWDs. Many aspects of information security work can be done remotely, providing flexibility and allowing individuals with to engage in tasks such as monitoring security logs and analyzing data from a remote location. Assistive technologies can be leveraged to facilitate tasks such as data analysis, code review, and monitoring security systems. PWDs can also contribute to security auditing and the development and implementation of security policies.

Formal education (by country) [10]

Greece	The education needed to be an information security engineer is normally a bachelor's degree in computer science, information technology or another related field. The individual must also have expert-knowledge of cybersecurity and related subjects. These qualifications are equivalent to NQF Level 6 and EQF Level 6 is required. In addition, information security engineers can complement the required knowledge and skills for this profession by attending an additional training program (eg. Security+, GCIH, SSCP, CISA). Recommended educational paths include: Bachelor's degree in Applied Computer Science. Fields of study: a) Applied Computer Science, b) Technology Management. Department of Applied Computer Science. School of Information Sciences. University of Macedonia. Bachelor's degree in Computer Engineering (T.E.).

[10] Please note that program availability and codes may be subject to change, so it is advisable to refer to the official websites of the universities for the most up-to-date information.

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	Department of Computer Engineering (T.E.). School of Technological Applications. Alexandrio Technological Educational Institute of Thessaloniki. Bachelor's degree in Information and Communication Systems Engineering. Department of Information and Communication Systems Engineering. School of Science. University of the Aegean. Bachelor's degree in Computer Science and Telematics. Department of Computer Science and Telematics. School of Digital Technology. Harokopio University. Bachelor's degree in Informatics. Department of Informatics. School of Sciences. University of Western Macedonia. Bachelor's degree in Computer Engineering Technological Education. Department of Computer Engineering of Technological Education. Technological Educational Institution of Central Greece Bachelor's degree in Digital Systems. Department of Digital Systems. School of Information and Communication Technologies. University of Piraeus. Bachelor's degree in Computer Engineering Technology, with Advanced Semester Directions: Network Engineering, Computer Engineering, Software Engineering. Department of Information Technology Engineering, School of Technological Applications. Technological Educational Institute of Crete. Bachelor's degree in Informatics and Telecommunications. Department of Informatics and Telecommunications. National and Kapodistrian University of Athens
Italy	A formal education in Computer science or a related field is typically required to become an Information Security Engineer. While some positions may accept candidates with a high school diploma, often combined with a vocational training course in the field, most employers prefer candidates with at least a bachelor's degree. Below examples of university programs at the bachelor's and master's levels, along with their program codes.

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	University Bachelor's Programs (Laurea Triennale, NQF:6, EQF:6): • Bachelor's Degree in Computer Science (Laurea triennale in Informatica) - Class L-31 • Bachelor's Degree in Security of IT Systems and Networks (Laurea triennale in Sicurezza dei Sistemi e delle Reti Informatiche) Class L-31 University Master's Programs (Laurea Magistrale, NQF:7, EQF:7): • Master's Degree in Computer Engineering (Laurea Magistrale in Ingegneria Informatica) -Class LM-32 • Master's Degree in Computer Science (Laurea Magistrale in Informatica) - Class LM-18 • Master's Degree in Artificial Intelligence and Cybersecurity (Laurea Magistrale inArtificial Intelligence and Cybersecurity) Class LM-18 Before choosing a program, it's advisable to check the specific details and curriculum of the programs offered by individual universities. A useful website to do it is Universitaly.
Cyprus	In Cyprus, there are several universities offering bachelor's degrees in fields related to information security engineering. These programs are designed to provide students with the necessary knowledge and skills in areas such as information systems security, cryptology, network security, and database security for this job role an EQF level 6 is required. Recommended educational paths include: European University Cyprus (EUC)https://euc.ac.cy/en/programs/bachelor-computer-science/#:~:text=,COMPUTER%20SCIENCE%20BSC%20AT%20EUC University of Nicosia https://www.unic.ac.cy/computer-science-bsc-4-years/#:~:text=,the%20Bachelor%20level%20the%20Computer
Spain	In Spain, to become an Information Security Engineer, you generally need a considerable level of education, including advanced university studies and a solid background in information security. To begin a career in information security, you typically need to obtain a bachelor's degree in a related field, such as Computer Engineering, Computer Science, Telecommunications Engineering, or something similar. These programs are usually at EQF level 6 and provide a solid foundation in computer science and technology. For more advanced and specialized Information Security Engineer roles, it is common to obtain a Master's degree in Information Security or

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	Cybersecurity. These master's programs (EQF 7) delve deeper into information security concepts and best practices. Bachelor's Degree in Computer Engineering https://www.educaweb.com/estudio/titulacion-grado-ingenieria-informatica/ Bachelor's Degree in Telecommunication Systems Engineering https://www.educaweb.com/estudio/titulacion-grado-ingenieria-sistemas-telecomunicacion/ Bachelor's Degree in Telecommunication Technologies Engineering https://www.educaweb.com/estudio/titulacion-grado-ingenieria-tecnologias-telecomunicacion/ Master's Degree in Cybersecurity https://www.educaweb.com/estudio/titulacion-master-oficial-ciberseguridad/
Portugal	The first step is to obtain a relevant higher education. This usually involves obtaining a degree in an area related to information security. These qualifications align with both NQF Level 6 and EQF Level 6. Gaining practical experience is critical to becoming a competent information security engineer. Many professionals start at entry-level positions, such as systems administrators or security analysts, and advance as they gain experience. Internships, jobs in IT departments and positions in cybersecurity companies are good ways to gain experience. Information security is an ever-evolving field. Keeping up with the latest trends, threats and technologies is key. Attend ongoing training courses, conferences and security groups to stay informed. Development of solid technical skills in areas such as networking, cryptography, firewalls, operating systems and digital forensics. Ethics are fundamental in information security. Information security engineers must act with integrity, strictly complying with security policies and ensuring data privacy and confidentiality. Relevant undergraduate courses Degrees: Computer Science and engineering Electronic Engineering and Telecommunications

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	Engineering of Computers and Telematics Management Informatics Networks and Computer Systems Educational institutions · Faculty of Science, University of Lisbon - https://ciencias.ulisboa.pt/ Faculty of Engineering, University of Porto - https://sigarra.up.pt/feup/pt/web_page.inicial · Lisbon School of Health Technology , Lisbon(ESTeSL) - https://www.estesl.ipl.pt/ · Faculty of Science and Technology, University of Coimbra - https://www.uc.pt/fctuc/ · University of Aveiro (UA) - Department of Electronics, Telecommunications and Informatics - https://www.ua.pt/pt/deti/courses · Department of Computer Science, University of Évora - https://www.uevora.pt/estudar/cursos/licenciaturas?curso=2570 · School of Engineering, University of Minho - https://www.eng.uminho.pt/pt
Belgium	Several paths can lead to a particular profession. Find following an overview per level of study of the basic course(s) that we consider logical for this profession. Know that there are often other options as well. Some occupations may require specific training by law. Academically oriented undergraduate courses aim to prepare for a master's degree and therefore not directly for this profession. They are listed here to indicate the entry level of the program. HO - Bachelor Electronics - ICT : Electronics *(Professional bachelor - HO)* Electronics - ICT : ICT *(Professional bachelor - HO)* Electronics - ICT : without specific specialisations *(Professional Bachelor - HO)* Applied Informatics : Software Management *(Professional Bachelor - HO)* Applied Informatics : Systems and Network Management *(Professional Bachelor - HO)* The Industrial Sciences : Electronics-ICT *(Academic bachelor - HO)* Computer Science *(Academic Bachelor - HO)* Engineering: Computer Science *(Academic Bachelor - HO)* HO - Master Digital Business engineering (E) *(Master - HO)* Engineering: Computer Science (E) *(Master - HO)* Industrial sciences Electronics - ICT : ICT *(Master - HO)* Engineering Engineering Applied Computer Science *(Master - HO)* VDAB training courses

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	Find out if there is a training course on the VDAB website.

Career Progression

Information Security Engineers can advance their careers by taking on increasingly challenging roles and responsibilities, such as senior security analyst, security architect, security consultant, or security manager. Advancement may also involve leading security projects, mentoring junior team members, or transitioning into leadership positions within the organization. Pursuing advanced education, such as a master's degree or PhD in cybersecurity, computer science, or information technology, can provide Information Security Engineers with deeper knowledge and expertise in the field. Advanced degrees may also open up opportunities for leadership roles, research positions, or academic careers in cybersecurity.

Employment trends

According to Cedefop, the Information and communication (ICT) sector is one of the most rapidly evolving sectors in the EU. ICT professionals, who mainly work in the ICT sector, accounted for around 2 per cent of all employment in the EU in 2022. These workers are important for the digital transformation that is currently taking place across several European economic sectors. Between 2012 and 2022 employment for ICT professionals increased by 90 per cent. Between 2019 and 2020 and despite the economic lockdowns experienced across the EU, almost 300 thousand new ICT professional jobs were created. Employment increased further in the following year, and by the end of 2022 it was 1 million workers above its 2019 level. Most ICT professionals (80 per cent) have attained a qualification level of ISCED 5 or above in 2021, equivalent to the first stage of tertiary education. The qualification level of the occupation is not expected to change over the period to 2035. ICT professionals are mainly men (82 per cent in 2021). The employment of ICT professionals is projected to increase by 30 per cent between 2022 and 2035. Most of the future ICT professionals will require multi-disciplinary 'T-shaped' skillsets, meaning that individuals in the ICT sector will need to have a broad range of skills complemented by one or two specialisations where they develop expert knowledge, including data analysis, cybersecurity, sustainability, and business relations.

Resources (by country)

General	What Is a Security Engineer? 2023 Career Guide. https://www.coursera.org/articles/what-is-a-security-engineer. O*NET OnLine. https://www.onetonline.org/link/summary/15-1299.05. European Commission – ESCO https://esco.ec.europa.eu/en/classification/occupation?uri=http://data.europa.eu/esco/occupation/0ce5a9f4-e00a-4bbe-b255-3c63407167a4. Akash, S. (July 2021). Top Trends in Information Security. https://www.analyticsinsight.net/top-trends-in-information-security/ Cedefop

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	https://www.cedefop.europa.eu/en/tools/skills-intelligence/occupations?occupation=2.25#1
Greece	ISC2 Hellenic Chapter https://isc2-chapter.gr/ Directorate General for Cyber Security/ Ministry of Digital Governance https://mindigital.gr/dioikisi/kyvernoasfaleia Women4Cyber Greece https://women4cybergreece.com/ Cyber Security International Institute in Greece https://www.csii.gr/ indeed https://gr.indeed.com/Cyber-Security-jobs-in-Greece?vjk=ec2233cb5bbcd4ba
Italy	Italian Agency for Cyber Security www.acn.gov.it Cyber Security National Coordination Center (NCC) Network Digital 360
Cyprus	Cyprus Cyber Security Challenge (CCSC):https://ccsc.org.cy/ Cyprus Cybercrime Center of Excellence (3CE): https://www.cyberwiser.eu/cyprus-cy Cyprian National Cyber Security Strategy: https://www.cyberwiser.eu/cyprus-cy
Spain	INCIBE: https://www.incibe.es/aprendeciberseguridad/ingenieria-social Spanish Data Protection Agency: https://www.aepd.es/
Portugal	
Belgium	CEDEFOP Belgium Guidance System in Belgium (Flanders) https://www.onderwijskiezer.be/v2/beroepen/beroep_detail.php?beroep=1920 https://competent.vdab.be/competent/release/current/occupationalprofile/OP-784

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IT application expert/specialist

Related professions

Software developer, IT process expert, Software Architect, Web designer.

Working Conditions

IT APPLICATION EXPERTs/SPECIALISTs specializes in the development, implementation, and maintenance of software applications within an organization. Much of their work involves using computers, laptops, and software development tools to design, code, test, and debug software applications. They typically work in office settings, either within the IT department of an organization or as part of a dedicated application development team. They may collaborate with other IT professionals, software developers, project managers, and end-users to design, develop, and maintain software applications. They may also interact directly with clients or stakeholders to gather requirements, provide updates on project status, and demonstrate software solutions. While many IT Application Experts/Specialists work standard office hours, they may also have flexibility in their work schedules, especially in roles that involve remote work or flexible hours. Depending on project deadlines and workload, they may need to work evenings, weekends, or overtime to meet project milestones or address urgent issues. Depending on the nature of the projects and the organization's requirements, IT Application Experts/Specialists may occasionally travel for client meetings, project kick-offs, training sessions, or conferences.

Responsibilities, knowledge, competences and skills, expected results

Core Activities and Tasks

IT Application Experts/Specialists' core activities and tasks involve a range of responsibilities related to the development, implementation, and maintenance of software applications. They analyze user requirements, design application architecture, and develop software solutions using programming languages and development frameworks. IT Application Experts/Specialists collaborate with stakeholders to gather requirements, define project scope, and create functional specifications. They conduct thorough testing, debugging, and quality assurance procedures to ensure the reliability, functionality, and performance of software applications. Additionally, they provide ongoing support, maintenance, and updates to address user issues, enhance features, and optimize application performance.

Knowledge, competences, and skills

IT Application Experts/Specialists should have deep expertise in programming languages, such as Java, C#, Python, or JavaScript, and proficiency in software development frameworks and tools. Strong analytical and problem-solving skills enable them to understand complex user requirements, architect scalable solutions, and troubleshoot technical issues efficiently. IT Application Experts/Specialists should be adept at project management methodologies, agile development practices, and version control systems to ensure timely delivery of high-quality software products. Effective communication and collaboration skills enable them to work closely with cross-functional teams, stakeholders, and end-users to gather requirements, provide technical guidance, and deliver solutions that meet business objectives.

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Additionally, they should continuously update their knowledge of emerging technologies, industry trends, and best practices to stay ahead in the dynamic field of application development.

Work prospects and opportunities for PWDs

PWDs can find promising and fulfilling career prospects as Information Technology (IT) application experts or specialists. Proper physical accommodations, and advanced assistive technologies such as screen readers, speech recognition software, keyboard adaptations and adaptive technologies for coding and testing can be used to facilitate PWDs engaging in tasks related to application development, testing, and maintenance. Moreover, new work models like remote work, platform work, and on-demand tasks offer flexibility, enabling persons with disabilities to thrive in IT specialist positions, contributing their expertise on their terms. PWDs can specialize in creating applications with accessibility features, ensuring that digital products are inclusive for users with various disabilities. Inclusive roles and responsibilities may relate to

- Requirements Analysis for new applications or updates - Application Development
- Application Maintenance and Support
- Database Management
- Integration and Interoperability of different software applications and platforms
- Security and Compliance of applications with industry regulations and organizational security policies.
- User experience design
- User Training and Support to end-users on how to use applications effectively.
- Creation and maintenance of comprehensive documentation for applications, including user guides, technical documentation, and change logs.
- Project Management
- Accessibility consulting

Formal education (by country) [11]

Greece	A formal education in computer science or a related field is typically required to become an IT application expert/specialist. While some positions may accept candidates with a certificate from upper secondary education (NQF Level 4 and EQF Level 4) combined with a vocational training course in the field, most employers prefer candidates with at least a vocational upper secondary school (EPAL) (NQF Level 4 and EQF Level 4) or vocational training diploma (post-secondary level – IEK) (NQF Level 5 and EQF Level 5). Qualifications at a Bachelor's (NQF Level and EQF Level 6)or Master's level (NQF Level 7 and EQF Level 7) are strongly desired. Here are some educational requirements and degree options for aspiring IT application expert/specialist: Vocational upper secondary school (EPAL) Informatics and Networks Technician

[11] Please note that program availability and codes may be subject to change, so it is advisable to refer to the official websites of the universities for the most up-to-date information.

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	Information Technology Applications Technician Vocational training institutes (IEK) Software Technician Bachelor's degree in Applied Computer Science. Fields of study: a) Applied Computer Science, b) Technology Management. Department of Applied Computer Science. School of Information Sciences. University of Macedonia. Bachelor's degree in Computer Engineering (T.E.). Department of Computer Engineering (T.E.). School of Technological Applications. Alexandrio Technological Educational Institute of Thessaloniki. Bachelor's degree in Computer Science and Telematics. Department of Computer Science and Telematics. School of Digital Technology. Harokopio University. Bachelor's degree in Informatics. Department of Informatics. School of Sciences. University of Western Macedonia. Bachelor's degree in Computer Engineering Technological Education. Department of Computer Engineering of Technological Education. Technological Educational Institution of Central Greece Bachelor's degree in Digital Systems. Department of Digital Systems. School of Information and Communication Technologies. University of Piraeus. Bachelor's degree in Computer Engineering Technology, with Advanced Semester Directions: Network Engineering, Computer Engineering, Software Engineering. Department of Information Technology Engineering, School of Technological Applications. Technological Educational Institute of Crete. Bachelor's degree in Computer Engineering. Department of Computer and Information Engineering. School of Engineering. University of West Attica.

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	Bachelor's degree in Computer Engineering and Informatics Department of Computer Engineering and Informatics. Faculty of Engineering University of Ioannina MSc in Applied Informatics, University of Macedonia MSc in Digital Media – Computational Intelligence, Aristotle University of Thessaloniki MSc in Informatics and Applications, University of West Attica MSc in Advanced Informatics and Computing Systems - Software Development and Artificial Intelligence, University of Piraeus MSc in Human-Computer Interaction, University of Patras
Italy	The profession does not require a formal compulsory education even if the selection normally takes place on the basis of the IT skills possessed and therefore acquired either in the field or, above all, through specific training courses in the IT field. Recommended educational paths include courses in the IT field with subsequent specializations that allow to deepen programming languages, specific sectoral applications (finance, mapping, production processes, user services, etc.). Continuous updating is essential in this profession, the times of change of technologies and applications are very fast today. While some positions may accept candidates with a high school diploma (NQF:4, EQF:4), often combined with a vocational training course in the field, some employers prefer candidates with at least a bachelor's degree. Below examples of university programs at the bachelor's and master's levels, along with their program codes. University Bachelor's Programs (Laurea Triennale, NQF:6, EQF:6): ● Bachelor's Degree in Computer Science (Laurea triennale in Informatica) - Class L-31 ● Bachelor's Degree in Security of IT Systems and Networks (Laurea triennale in Sicurezza dei Sistemi e delle Reti Informatiche) Class L-31 ● Bachelor's Degree in Social Innovation, Communication, New Technologies (Laurea triennale in Innovazione Sociale, Comunicazione, Nuove Tecnologie) - Class L-20 ● Bachelor's Degree in Mathematics (Laurea Triennale in Matematica) - Class L-35 University Master's Programs (Laurea Magistrale, NQF:7, EQF:7):

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	• Master's Degree in Computer Engineering (Laurea Magistrale in Ingegneria Informatica) - Class LM-32 • Master's Degree in Computer Science (Laurea Magistrale in Informatica) - Class LM-18 • Master's Degree in Communication, ICT and Media (Laurea Magistrale in Comunicazione, ICT e media - Class LM-59 Before choosing a program, it's advisable to check the specific details and curriculum of the programs offered by individual universities. A useful website to do it is Universitaly.
Cyprus	For individuals interested in becoming an IT application expert or specialist in Cyprus, a bachelor's degree in a related field is typically required EQF level 6. Recommended educational paths include: European University Cyprus (EUC) https://euc.ac.cy/en/programs/bachelor-computer-information-systems/#:~:text=The%20BSc%20in%20Computer%20Information,people%20and%20the%20business https://euc.ac.cy/en/programs/bachelor-computer-science/#:~:text=Study%20Computer%20Science%20at%20the,Internship%20Project%3A%206%3A%2037
Spain	To become a Computer Applications Expert or Specialist, you must undergo training and acquire specific skills in the field of computer science and application development. Bachelor's Degree in Computer Engineering https://www.educaweb.com/estudio/titulacion-grado-ingenieria-informatica/ Bachelor's Degree in Software Engineering https://www.educaweb.com/estudio/titulacion-grado-ingenieria-software/ Master's degree in Information Technologies Management https://www.educaweb.com/estudio/titulacion-master-oficial-gestion-tecnologias-informacion/ Master's Degree in Software Engineering https://www.educaweb.com/estudio/titulacion-master-oficial-ingenieria-software/
Portugal	It should start with secondary education (NQF level 5 and EQF level 5). During this period, a specific branch is chosen that includes disciplines related to Science and Technology or Informatics. This will provide a solid foundation in mathematics, physics and informatics.

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	Upon completion of secondary education, enter a computer-related higher education course is advised. Undergraduate courses in Computer Engineering, Computer Science, Information Systems or similar areas are common in universities and polytechnics in Portugal. These qualifications align with NQF Level 6 and EQF Level 6. During or after completing the degree, it is important to consider the possibility of undertaking internships in technology companies or software development projects to gain practical experience. This can be useful for building a portfolio and acquiring additional skills. For further skill enhancement or specialization, individuals may opt to pursue a postgraduate (Master's) degree in fields such as Informatics, Software Engineering, or related areas (NQF level 7 and EQF level 7). Although it is not strictly necessary to become a programmer, a master's degree can open doors to more advanced or specialized positions. In conjunction with formal education, it's essential to cultivate proficient technical skills in pertinent programming languages, software development tools, operating systems, and other technologies pertinent to the programming domain. In Portugal, aspiring computer programmers have the option to pursue undergraduate courses in fields related to computer science and programming as a foundational step. **Computer Engineering** · University of Lisbon - https://www.ulisboa.pt/ · University of Porto - https://www.up.pt/portal/pt/ · University of Coimbra - https://www.uc.pt/ **Engineering of Systems and Informatics** · Lisbon Polytechnic (IPL) - https://www.ipl.pt/ **Information and Communication Technology (ICT)** Porto Polytechnic (IPP) - https://www.ipp.pt/
Belgium	

Career Progression

Career progression for IT Application Experts/Specialists typically begins with entry-level positions as Junior Developers or Programmers, where individuals gain foundational experience in software development. With time and experience, they advance to roles such as Software Developers or Engineers, taking on more complex projects and responsibilities. As they demonstrate proficiency and leadership skills, they may transition into Senior Developer or Lead Developer positions, overseeing

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teams and projects. Further progression may lead to roles such as Technical Architect, Project Manager, or IT Manager, where they take on broader responsibilities in project management, technical leadership, and IT strategy. At the highest levels of career advancement, IT Application Experts/Specialists may aspire to executive roles like Chief Technology Officer (CTO) or similar positions, where they drive technology strategy and innovation for the organization. Throughout their career, continuous learning, skill development, and staying updated with emerging technologies are essential.

Employment Trends

According to Cedefop, the Information and communication (ICT) sector is one of the most rapidly evolving sectors in the EU. ICT professionals, who mainly work in the ICT sector, accounted for around 2 per cent of all employment in the EU in 2022. These workers are important for the digital transformation that is currently taking place across several European economic sectors. Between 2012 and 2022 employment for ICT professionals increased by 90 per cent. Between 2019 and 2020 and despite the economic lockdowns experienced across the EU, almost 300 thousand new ICT professional jobs were created. Employment increased further in the following year, and by the end of 2022 it was 1 million workers above its 2019 level. Most ICT professionals (80 per cent) have attained a qualification level of ISCED 5 or above in 2021, equivalent to the first stage of tertiary education. The qualification level of the occupation is not expected to change over the period to 2035. ICT professionals are mainly men (82 per cent in 2021). The employment of ICT professionals is projected to increase by 30 per cent between 2022 and 2035. Most of the future ICT professionals will require multi-disciplinary 'T-shaped' skillsets, meaning that individuals in the ICT sector will need to have a broad range of skills complemented by one or two specialisations where they develop expert knowledge, including data analysis, cybersecurity, sustainability, and business relations.

Resources (by country)

General	DigComp Framework, European Commission Digital Economy and Society Index (DESI)- EU Commission ICT Sector Eurostat WIRED www.wired.com Computer World www.computerworld.com MIT Technology review www.technologyreview.com Cedefop. https://www.cedefop.europa.eu/en/tools/skills-intelligence/occupations?occupation=2.25#1

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Greece	List of the Top Greece Mobile App Development Companies https://clutch.co/gr/app-developers Top 10+ App Development Companies in Greece 2023 https://www.softwareworld.co/top-app-development-companies-greece/ Glassdoor https://www.glassdoor.com/Job/greece-software-developer-jobs-SRCH_IL.0,6_IN100_KO7,25 Developer conferences in Greece 2023 / 2024 https://dev.events/EU/GR.htm
Italy	AIP - Associazione Informatici Professionisti web.aipitcs.it Associazione Italiana per l'Information Technology www.anitec-assinform.it European Certification of Informatics Professionals Albo Nazionale Informatici Professionisti www.alboinformatici.com Wired Italia www.wired.it ICTBusiness.it www.ictbusiness.it Furthermore, it is important to know that in Italy every year there are two crucial events for all those who deal with ICT: ● Smau (Milano): Esposizione Internazionale di Information & Communications Technology www.smau.it/milano/ ● FuturShow (): Esposizione Internazionale di Information & Communications Technology
Cyprus	Cyprus Information Technology Enterprises Association (CITEA) https://citea.cy/en/ Cyprus Digital Skills and Jobs Coalition: https://digital-skills-jobs.europa.eu/en/actions/national-initiatives/national-strategies/cyprus-national-digital-strategy-2020-2025#:~:text=The%20Digital%20Strategy%20for%20Cyprus,a%20clear%20vision%20for%20change
Spain	Computer Association of Computer Programmers: https://asociacionaepi.es/
Portugal	
Belgium	

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Medical Equipment Technician

Related occupations

Biomedical equipment technician (BMET), Medical equipment repairer, Biomedical electronics technician, Biomedical engineering technician (BMET), Biomedical equipment specialist.

Working Conditions

A MEDICAL EQUIPMENT TECHNICIAN works indoors, in facilities such as hospitals, medical centers, private practice groups, clinics, wholesale suppliers. They maintain and repair medical electronic or mechanical equipment such as: surgical equipment (lights, chairs, tables, microscopes etc.), infant machines (warmers, fetal and patient monitors, pediatric exam tables, incubators etc.), ultrasound machines including cardiac, portable, color doppler and advanced digital, endoscopy machines (cameras, light sources, video processors, insufflators, colonoscopes, electrosurgical units), laboratory equipment, nuclear imaging devices and medical equipment that dentists and eye doctors use.
Medical equipment technicians work in patient care areas and while repairing vital medical equipment is urgent, the work can be stressful. The job may involve physical tasks such as lifting and moving heavy equipment, bending, stooping, and standing for extended periods. Technicians may need to work in tight spaces or awkward positions to access equipment for repair or maintenance. They use a variety of specialized tools, hand tools, diagnostic equipment, and software to troubleshoot, calibrate, and repair medical devices. Medical Equipment Technicians may work regular business hours, but they may also be required to work evenings, weekends, or on-call shifts to address emergencies or urgent equipment repairs. Hospitals and healthcare facilities often require round-the-clock coverage for essential medical equipment.

Responsibilities, knowledge competences and skills, expected results

Core Activities and Tasks

Medical Equipment Technicians are responsible for the installation, maintenance, calibration, and repair of various medical devices and equipment used in healthcare settings. Their core activities and tasks include conducting routine inspections to assess equipment functionality, diagnosing technical issues through troubleshooting and diagnostic tests, and performing preventive maintenance to ensure equipment reliability and compliance with regulatory standards. They collaborate with healthcare professionals to address equipment-related concerns and prioritize repair needs. Additionally, they may assist in the procurement of new equipment, conduct equipment training for staff, and maintain detailed records of equipment maintenance and service history to ensure proper documentation and regulatory compliance. Overall, their role is critical in ensuring the safe and effective operation of medical equipment to support patient care and healthcare delivery.

Knowledge, competences, and skills

Medical Equipment Technicians need a strong understanding of biomedical engineering principles, including electrical, mechanical, and hydraulic systems, as well as knowledge of medical equipment functionality and operation. Proficiency in diagnostic tools and techniques is essential for troubleshooting and identifying technical issues accurately. Additionally, they must possess excellent problem-solving skills to diagnose and resolve equipment malfunctions promptly. They should be

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familiar with regulatory standards and guidelines governing medical device maintenance and safety to ensure compliance. Effective communication and interpersonal skills are necessary for collaborating with healthcare professionals and providing clear instructions to equipment users. Attention to detail, organization, and time management skills are also critical for managing equipment maintenance schedules, documentation, and prioritizing repair tasks effectively.

Work prospects and opportunities for PWDs

As medical technology continues to advance, the demand for skilled technicians to install, maintain, and repair medical equipment is on the rise. PWDs can contribute significantly to this field with the relevant training and accommodations. They can engage in various roles, including equipment installation, calibration and testing, troubleshooting, and preventive maintenance. They can also undertake administrative and documentation tasks, data entry and management. Remote monitoring and diagnostic capabilities can offer flexibility to work in hospitals, clinics, or with medical equipment manufacturers. The expansion of telehealth capabilities allows for remote work opportunities in managing and maintaining medical equipment used in telehealth services. Collaborating with manufacturers to improve the design and functionality of medical devices, ensuring that medical equipment is accessible and usable for individuals with disabilities can be a feasible career option. Also, engaging in consulting roles to provide insights on accessible and innovative medical technologies can be disability friendly.

Formal education (by country) [12]

Greece	Medical equipment technicians typically hold a bachelor's degree (NQF Level 6 and EQF Level 6) or a vocational training diploma (post-secondary level – IEK) (NQF Level 5 and EQF Level 5). Recommended educational paths include: Bachelor’s degree in Biomedical Engineering Department of Biomedical Engineering University of Western Attica Bachelor’s in informatics with applications in biomedicine Department of Computer Science and Biomedical Informatics University of Thessaly Medical equipment technician Vocational training institutes (IEK) https://iekaigal.att.sch.gr/?p=296

[12] Please note that program availability and codes may be subject to change, so it is advisable to refer to the official websites of the universities for the most up-to-date information.

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	https://iek-monastiriou.gr/medical/ https://gsvetlly.minedu.gov.gr/publications/docs2023/14.%CE%A4%CE%95%CE%A7%CE%9D%CE%99%CE%9A%CE%9F%CE%A3_%CE%99%CE%91%CE%A4%CE%A1%CE%99%CE%9A%CE%A9%CE%9D_%CE%9F%CE%A1%CE%93%CE%91%CE%9D%CE%A9%CE%9D.pdf
Italy	To work as a Medical Equipment Technician in Italy, individuals typically hold a post-secondary vocational school diploma (i.e. ITS Academy - Nuove tecnologie della vita, NQF:5 , EQF:5) or a bachelor's degree (NQF:6, EQF:6). They can also pursue education and training in biomedical engineering or related fields. Here are examples of relevant university programs at the bachelor's and master's levels, along with their program codes: University Bachelor's Programs (Laurea Triennale, NQF:6, EQF:6): - Biomedical Engineering (Ingegneria Biomedica), class L-8 - Electronic Engineering (Ingegneria Elettronica), class L-9 University Master's Programs (Laurea Specialistica, NQF:7, EQF:7): - Biomedical Engineering (Ingegneria Biomedica), class LM-21 - Medical Physics (Fisica Medica), class LM-13 Before choosing a program, it's advisable to check the specific details and curriculum of the programs offered by individual universities. A useful website to do it is Universitaly.
Cyprus	In Cyprus, individuals interested in becoming a Medical Equipment Technician can pursue a Bachelor's degree in Biomedical Engineering EQf6. Recommended educational paths include: UNIC: https://www.med.unic.ac.cy/register-doctor-of-medicine-degrees-md6-gemd5/?utm_source=Google&utm_medium=Search&utm_campaign=Medicine-Degrees-MD6&GEMD5-Cyprus&utm_term=medical%20college&gad_source=1&gclid=CjwKCAiAx_GqBhBQEiwAlDNAZosL5xpRAjDQZ_tJYiZzC5HaL_z9yKOSU9rO88hyupn4ccY_8oio-hoCBVwQAvD_BwE EuropeanUniversity: https://euc.ac.cy/en/programs/bachelor-biomedical-sciences/
Spain	In addition to secondary education, medical equipment technicians typically complete specific technical training programs related to medical technology and equipment repair. These programs may be at EQF level 4 or 5 and are designed to provide specific knowledge and skills in the maintenance and repair of medical equipment. Bachelor's Degree in Biomedical Engineering https://www.educaweb.com/estudio/titulacion-grado-ingenieria-biomedica/

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Portugal	In Portugal, the completion of the 12th grade is required to become a Medical Equipment Technician. During secondary school, it is important to choose a course focusing on science, technology or electronics as this will provide a solid foundation for the career of Medical Equipment Technician. These qualifications align with NQF Level 5 and EQF Level 5. Following secondary school, people have the option to enroll in a vocational technical course focusing on electronics, medical technology, or related fields. Such courses offer specialized and practical knowledge essential for the profession of a Medical Equipment Technician. Although not strictly necessary, some Medical Equipment Technicians choose to pursue a degree in Biomedical Engineering, Medical Technology or similar areas. This provides a stronger foundation in medical electronics and medical technology. These qualifications align with both NQF Level 6 and EQF Level 6. After initial training, it is important to obtain specific training in medical electronics. This can be accomplished through vocational training courses, learning programs or training programs offered by technical education institutions or companies in the health sector. During or after specific training, it is advisable to undertake internships or gain practical experience in medical electronics. This will help to apply the theoretical knowledge in practice and to understand the specifics of the area**.** To stand out as a Medical Equipment Technician, it's advisable to acquire pertinent certifications within the field. Additionally, it's crucial to consistently update knowledge and skills, aligning with the continuous evolution of medical technology. Here are some institutions where you can find training programs in Medical Electronics in Portugal: **School of Health of the Polytechnic Institute of Porto (ESS/IPS) - https://www.ess.ipp.pt/ :** offers a degree program in Health Technologies, which includes disciplines related to Medical Electronics and Medical Technology. **Lisbon School of Health Technology (ESTeSL/IPL) - https://www.estesl.ipl.pt/ :** offers technical training courses in the area of Radiation Technology, Cardiovascular Technology and other disciplines related to medical technology. **Santa Maria School of Health (ESSSM/UM) - https://www.santamariasaude.pt/ :** offers courses in the area of Health Technologies, with emphasis on medical technology and medical electronics. **School of Health of the Polytechnic Institute of Coimbra (ESS/IPC) - https://www.estesc.ipc.pt/ :** offers training courses in the area of Health Technologies, focusing on medical technology and medical equipment.

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	University of Aveiro School of Health (ESSUA) - https://www.ua.pt/pt/essua/cursos : offers courses in the area of Health Technologies, with emphasis on medical technology and medical electronics. **Lisbon School of Health Technology (ESTeSL/IPL) - https://www.estesl.ipl.pt/ :** offers technical training courses in the area of Radiation Technology, Cardiovascular Technology and other disciplines related to medical technology. **Santa Maria School of Health (ESSSM/UM) - https://www.santamariasaude.pt/ :** offers courses in the area of Health Technologies, with emphasis on medical technology and medical electronics. **School of Health of the Polytechnic Institute of Coimbra (ESS/IPC) - https://www.estesc.ipc.pt/ :** offers training courses in the area of Health Technologies, focusing on medical technology and medical equipment. **University of Aveiro School of Health (ESSUA) - https://www.ua.pt/pt/essua/cursos :** offers courses in the area of Health Technologies, with emphasis on medical technology and medical electronics.
Belgium	

Career Progression

Career progression for Medical Equipment Technicians typically begins with entry-level positions in equipment maintenance, repair, and calibration. They can advance to senior technician roles, taking on more complex repair tasks and providing training to junior technicians. Further progression may lead to leadership positions such as team leader or lead technician, where they oversee maintenance schedules and coordinate equipment management efforts. With additional education or experience, Medical Equipment Technicians may transition into roles as biomedical engineers, clinical engineers, or managers in healthcare facilities, where they contribute to strategic planning, regulatory compliance, and technology implementation. Career growth opportunities may also include consulting or industry specialist roles, where they provide expertise and advisory services to healthcare organizations or medical device manufacturers. Continued professional development and staying updated with advancements in medical technology are essential for career advancement in this field.

Employment trends

The jobs created by the medical technology industry account for around 0.3% of total employment in Europe. These jobs are also highly productive, as the value added per employee is estimated to reach around €184,000 per employee. These indicators show that the medical technology industry has an important economic and societal impact in Europe. The European medical technology market is estimated at roughly €120 billion in 2018. The biggest medical device markets in Europe are Germany, France, the United Kingdom, Italy and Spain. Within the wider occupation of technical managers - including the health sector - future job prospects for technical managers in EU27 over the period 2022-2035 is 72, which means that there will be more job openings than the number of current jobs in the occupations. Additionally, further information from international databases have shown that

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employment of medical equipment technicians is projected to grow 17% from 2021 to 2031, much faster than the average for all occupations. With the expected increase in the number of older adults and the prevalence of chronic diseases among them, demand for medical care and the equipment used to diagnose, monitor, and treat diseases will grow. Moreover, advancing technologies and tools that require more complex skills to fix, such as MRI, ultrasound, and X-ray machines have prevailed. Thus, more medical equipment technicians will be needed to ensure that these machines work properly.

Resources

General	U.S. Bureau of Labor Statistics. Occupational Outlook Handbook. https://www.bls.gov/ooh/installation-maintenance-and-repair/medical-equipment-repairers.htm#tab-1 O*NET OnLine. https://www.onetonline.org/link/summary/49-9062.00 INTERMED. https://intermed1.com/what-is-a-biomedical-equipment-technician/ Indeed. https://www.indeed.com/career-advice/finding-a-job/biomedical-technician HealthCarePathway.com. https://www.healthcarepathway.com/health-care-careers/biomedical-technician/ MedTech Europe https://www.medtecheurope.org/datahub/employment-companies/ Cedefop https://www.cedefop.europa.eu/en/tools/skills-intelligence/occupations?occupation=1.13#1
Greece	Biomedical Engineering Companies Database https://bme.uniwa.gr/professional-rights/bme-database/ jooble https://tinyurl.com/3aw5yzpd
Italy	Ministero della salute https://www.salute.gov.it/portale/home.html ANTEV Associazione Nazionale Tecnici Verificatori associazioneantev.e-monsite.com/ A N.T.A.B. Associazione Nazionale Tecnici delle Apparecchiature Biomediche www.antab.org/wp/ Jobsanita.it https://www.jobsanita.it/
Cyprus	European Federation of Medical Physics (EFOMP): https://www.efomp.org/

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Spain	Study of the healthcare technology and hospital equipment sector in spain : https://www.fenin.es/documents/document/103
Portugal	Eletrónica Médica - Eprami CINEL - Técnico/a de Eletrónica Médica
Belgium	

Online educator

Related professions

Online Instructional designers, Online tutor.

Working Conditions

An online educator teaches courses or provides educational instruction primarily through digital platforms and the internet. They may work for educational institutions, online learning platforms, corporate training programs, or as independent instructors offering courses or tutoring services online. The working conditions for online educators can vary widely depending on the specific platform, institution, or organization they work for, as well as the nature of their role and the subject matter they teach. Most of their work takes place in virtual environments, such as online learning management systems (LMS), video conferencing platforms, or virtual classrooms. They use these platforms to deliver lectures, conduct discussions, grade assignments, and interact with students. Online educators typically have the flexibility to work from any location with an internet connection, allowing for remote work opportunities. While online educators may have set hours for live lectures or office hours, they often have more flexibility in their schedules compared to traditional classroom teachers. They can choose when to review assignments, respond to student inquiries, and prepare course materials.

Responsibilities, Knowledge, Competences and skills, expected results

Core activities and tasks

ONLINE EDUCATORs perform a variety of activities related to teaching and facilitating learning in an online environment. They focus on designing, delivering, and facilitating educational content through digital platforms. They develop curriculum materials, including lectures, presentations, assignments, and assessments, tailored to the specific needs and objectives of the course or program. Online educators engage with students through various online communication channels, such as video conferencing, discussion forums, emails, and messaging platforms, to provide instruction, guidance, and feedback. They monitor student progress, assess learning outcomes, and adapt teaching strategies as needed to optimize student learning experiences. Online educators rely heavily on technology to deliver instruction and communicate with students. They need a stable internet connection, access to computers or mobile devices, and proficiency in using various software tools and platforms for teaching purposes. They may teach students from diverse backgrounds, age groups, cultures, and locations around the world.

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Knowledge, competences, and skills

Online educators need a strong understanding of educational principles and theories to design engaging and effective online courses that meet learning objectives and standards. Proficiency in using online teaching tools and platforms, as well as multimedia content creation software, is essential for developing interactive course materials and delivering engaging lessons. Excellent communication skills, both written and verbal, are crucial for effectively conveying information, facilitating discussions, and providing feedback to students remotely. They must be culturally sensitive and inclusive in their teaching approach, ensuring that all students feel welcome and supported in the virtual learning environment. Additionally, online educators must possess strong organizational and time management skills to manage course materials, grading, and student interactions efficiently. Adaptability and flexibility are also important, as they need to adjust their teaching methods and approaches to meet the diverse needs and preferences of online learners. Overall, they need a combination of subject matter expertise, pedagogical knowledge, and technical skills to effectively teach and support students in the online learning environment.

Work prospects and opportunities for PWDs

Online education is a rewarding career path with opportunities for inclusivity. The flexibility of online teaching allows for diverse roles and adaptations to accommodate different abilities and needs. PWDs as online educators can engage in designing and delivering online courses in a wide range of topics, from academic subjects to skills-based courses. They can provide one-on-one or small group instruction to support student learning in specific subjects, offering assistance with homework and exam preparation, or providing special education support to students with diverse learning needs. Adult Education is also a dynamic domain that can offer various opportunities. PWDs can also engage in Accessible Course Design, collaborating with educational institutions to implement inclusive design practices, training curricula and material, ensuring online courses are designed to be accessible to students with diverse disabilities. Accommodations for online educators with disabilities may include assistive technology, such as screen readers, captioning tools, audio instruction and video-conferencing, as well as flexible work schedules, and inclusive course design practices. Synchronous and asynchronous distance learning models and platform-based instruction provide flexibility to teaching schedule and enable educators to adapt teaching methods to their needs, promoting accessibility and quality education for all.

Formal education (by country) [13]

Greece	At least a Bachelor's degree in the main teaching field of each online educator (e.g. English, chemistry, history) is required (NQF Level 6 and EQF Level 6). In some of these degrees, teaching certification is embedded, while in others, an additional teaching license is needed. This teaching license is provided by specialized programmes offered in various higher education institutions such as: • Pedagogical Training Program, Higher School of Pedagogical and Technological Education

[13] Please note that program availability and codes may be subject to change, so it is advisable to refer to the official websites of the universities for the most up-to-date information.

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	• Pedagogical and Teaching License, Hellenic Open University • Pedagogical and Teaching License, Ionian University • Pedagogy and Teaching Competence Programme, Democritus University of Thrace Additionally, certain knowledge and skills in the applications and tools of online education are essential for online educators. Such skills and knowledge can be obtained either through hands-on experience or through specialization programmes in ICT in education such as (NQF Level 7 and EQF Level 7): • Master's degree in "Education Sciences - Education with the Use of New Technologies", University of the Aegean • Master's degree in Sciences of Education with New Technologies, University of Western Macedonia • Master's degree in E-Learning, University of Piraeus
Italy	Since there are no specific rules or laws governing the profession, no educational qualifications, registrations or minimum periods of compulsory professional practice are required. There is no standard training course for Online Educator. At the same time, to work as an Online Educator, the specific educational requirements can vary depending on the platform or institution you plan to work with and the subject area you wish to teach. Aspiring online educators usually begin by obtaining a relevant education and qualifications in their chosen field of expertise. This may include earning a bachelor's or master's degree in education, instructional design, or a specific subject area. Here are some common educational qualifications and skills that can be beneficial for an online educator: • Bachelor's degree or higher(NQF:6, EQF: 6): many online teaching positions, especially those with reputable institutions or organizations, require a minimum of a bachelor's degree. Some subjects, such as mathematics, sciences, or languages, may require a higher level of education. • Teaching certification: while not always mandatory, having a teaching certification or a degree in education can enhance your credibility as an online educator. These certifications can vary by employer/platform, so it's important to research the specific requirements for your desired teaching position. • Subject expertise: in addition to a degree, having a strong background in the subject you want to teach is crucial. It is essential to have a deep understanding of the concepts, theories, and practical aspects related to your subject area.

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	• Experience and credentials: prior teaching experience, whether in traditional classroom settings or other online platforms, can be beneficial. It demonstrates your ability to effectively communicate with students and manage an online learning environment. Additionally, obtaining additional certifications or credentials related to your subject area can help showcase your expertise. • Technological proficiency: online teaching often requires the use of various technologies, such as learning management systems, video conferencing tools, and multimedia resources. Familiarity with these tools and the ability to adapt to new technologies are important skills for an online educator.
Cyprus	In cyprus there are couple of diplomas EQF level 4 and 5 for becoming an online educator however not specific bachelor degrees in this subject exist at this point: Recommended educational paths include: • European University Cyprus: https://euc.ac.cy/en/academics/schools-departments/distance-education-unit/ Cyprus HRDA EQf5: https://www.anad.org.cy/wps/wcm/connect/hrda/1a220b00-0c70-4f2d-a20c-ecf8a6acbc6e/VocTrainingTeachTr2007_en0002.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=ROOTWORKSPACE.Z18_HHHAH9O0NGE980A7L632QJ0000-1a220b00-0c70-4f2d-a20c-ecf8a6acbc6e-nFm.u7B
Spain	To become an online teacher in Spain, you usually need at least a bachelor's degree in the subject you plan to teach. Bachelor's Degree in Pedagogy https://www.educaweb.com/estudio/titulacion-grado-pedagogia/ trainer of trainers courses https://www.educaweb.com/estudio/titulacion-formacion-formador-formadores/
Portugal	As there are no particular regulations or laws overseeing this profession, there are no mandatory educational qualifications, registrations, or minimum durations of compulsory professional experience. Additionally, there is no established training program for individuals working as online educators. However, there is a variety of academic paths to become an educator, regardless of whether you work online or not. During secondary education, it is important to choose an area of study that is related to online education, such as Educational Sciences or other related areas. These qualifications align with NQF Level 5 and EQF Level 5.

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	After secondary education, it is common to enter higher education. Courses that may be relevant to becoming an online educator include Pedagogy, Education Sciences, Education Technologies, among others. It is important to choose a course that provides the skills and knowledge necessary for online education. During higher education or after completion of the undergraduate degree, it is possible to seek specializations related to online education, such as training courses in e-learning, instructional design, digital content development, among others. Gaining practical experience is key to becoming an online educator. This can be obtained through internships in educational institutions, work as an online tutor, or developing online courses on your own. As an online educator, it is important to have technical skills related to the use of online learning platforms, virtual communication tools and digital content creation. **Relevant undergraduate courses:** Bachelor of Science in Education Bachelor in Information and Communication Technologies in Education Degree in Pedagogy Degree in Informatics Bachelor's Degree in Multimedia Design **Universities and institutions in Portugal offering courses related to online education and information technology**: · University of Lisbon - https://ulisboa.pt/ · University of Porto - https://www.up.pt/portal/pt/ · Universidade de Aveiro - https://www.ua.pt/ · University of Coimbra - https://www.uc.pt/ · NOVA University of Lisbon - https://www.unl.pt/ · Lisbon Polytechnic - https://www.ipl.pt/ Porto Polytechnic - https://www.ipp.pt/
Belgium	

Career Development

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Online educators may start their career by obtaining relevant degrees in education or their field of expertise, then gain experience through internships or entry-level roles. They progress by developing digital teaching skills, earning advanced degrees or certifications, and specializing in niches (i.e. instructional design or edtech). As e-learning becomes ever-more widespread, online educators are being required to design learning experiences that engage and meet the needs of very diverse learners. Career evolution may lead to roles like eLearning consultant, curriculum developer, or online education administrator. Experienced online educators may advance into leadership positions within educational institutions or online learning platforms. They can become instructional designers, or program coordinators, overseeing the development and implementation of online education initiatives. It's also crucial for online educators to stay updated with emerging trends and best practices in online education, continuously improve their skills, and adapt to the evolving needs of online learners.

Employment Trends

The career of an Online educator has seen significant growth and development in recent years, especially with the rapid advancement of technology and the increasing demand for online learning opportunities. Online educator can offer accessibility, flexibility for individuals with disabilities, allowing them to work from home and accommodate their needs. Additionally, it includes a wide range of subjects to teach, and the potential for a global audience. The COVID-19 pandemic, online learning platforms, and modern technology have increased access to quality distance learning. Based on a Eurostat survey, in 2021, 27% of people aged 16 to 74 in the EU reported that they did an online course or used online learning material in the last three months prior to the survey, a 4 percentage points (pp) increase compared with 23% in 2020. These changes have created both opportunities and challenges for the educational industry and, there is a growing demand for qualified online teachers. In general, the employment of teaching professionals is projected to increase by 6 per cent between 2022 and 2035. Teaching professionals of the future will have to cope with the increasing diffusion of digital tools in classrooms across all educational stages and teach students how to properly use these tools. The increase in the provision of asynchronous forms or learning will also affect the skillsets of teaching professionals in the future (Cedefor,2023).

Resources (by country)

General	EU Digital Education Action Plan European Education Area - Digital Education Magazines Online Learning Journal onlinelearningconsortium.org/read/olc-online-learning-journal/ eLearn Magazine elearnmag.acm.org/ Journal of Online Learning and Teaching (JOLT) jolt.merlot.org/ The International Review of Research in Open and Distributed Learning (IRRODL) www.irrodl.org/index.php/irrodl Websites

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	eLearning Industry elearningindustry.com Online Learning Consortium onlinelearningconsortium.org TeachThought teachthought.com eLearning Guild elearningguild.com European Commission https://epale.ec.europa.eu/en/content/teachers-europe-careers-development-and-well-being-eurydice-report Eurostat https://ec.europa.eu/eurostat/web/products-eurostat-news/-/edn-20220124-1 Eures https://eures.europa.eu/future-work-teaching-professionals-2021-01-29_en
Greece	Greece - Technology - Education profiles https://education-profiles.org/europe-and-northern-america/greece/~technology Online tutors in Greece https://www.teacheron.com/online-tutors-in-greece Accelerated Training of Teachers in Distance Education https://t4e.sch.gr/
Italy	Educazione Digitale www.educazionedigitale.it/ Formazione & Insegnamento ojs.pensamultimedia.it/index.php/siref/index The Italian Journal of Educational Technology (IJET) ijet.itd.cnr.it/index.php/td
Cyprus	• Cyprus Pedagogical Institute https://www.moec.gov.cy/en/ Cyprus Association of Distance Learning https://euc.ac.cy/en/academics/schools-departments/distance-education-unit/
Spain	Educational resources to work with: http://jjfrias.com/recursos-educativos-tic-para-docentes
Portugal	Certificação de formadores - IEFP, I.P. Quais os requisitos para ser um Formador | Formação de Formadores-CCP (formacaoformadores-ccp.pt)
Belgium	

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Personal (Care) Assistant

Related occupations

Caregiver, Home Care Aide, Patient Care Assistant (PCA), Personal Care Aide, Personal Care Attendant (PCA), Resident Care Assistant (RCA), Personal Care Provider, Personal Care Worker.

Working Conditions

PERSONAL CARE ASSISTANTs (PCAs) provide support and assistance with daily living activities to individuals who may need help due to age, illness, disability, or other challenges. PCAs work in various settings, including private residencies, assisted living facilities, healthcare institutions, nursing homes or day care facilities. Their role is crucial in enhancing the quality of life for those they assist. This job requires physical proximity and face-to-face contact with others. Working hours for PCAs can vary and may include evenings, weekends, or overnight shifts, depending on their clients' needs and schedules. They may work part-time or full-time hours, and some may have irregular schedules based on their clients' preferences. The job of a PCA can be physically demanding, requiring lifting, bending, and assisting clients with mobility, personal care tasks, and household chores. PCAs must have the physical stamina and strength to perform these tasks safely and effectively. Providing care to individuals who may be ill, elderly, or disabled can be emotionally demanding. PCAs may encounter challenging situations, including dealing with clients who have behavioral or cognitive issues or working in environments where there may be safety hazards.

Activities, knowledge and hard skills, expected results

Core Activities and Tasks

Personal Care Assistants (PCAs) core activities and tasks include assisting clients with personal hygiene tasks such as bathing, grooming, and dressing, as well as helping with mobility, transferring, and positioning. PCAs may also assist with meal preparation, feeding, medication reminders, and light housekeeping tasks to ensure their clients' comfort and well-being. Additionally, they provide companionship and emotional support, engaging in conversation, recreational activities, or accompanying clients on outings as needed. PCAs play a crucial role in helping individuals maintain their independence, dignity, and quality of life by providing personalized care and support tailored to their specific needs and preferences.

Knowledge, competences, and skills

Personal Care Assistants (PCAs) need a solid understanding of personal care techniques, including proper hygiene practices, safe transferring and lifting methods, and basic first aid procedures. Compassion, empathy, and patience are essential traits for PCAs, enabling them to provide sensitive and respectful care to clients with varying needs and abilities. Strong communication skills are crucial for building rapport with clients, understanding their preferences, and effectively conveying information to healthcare professionals or family members. PCAs must also be adaptable and able to respond calmly and confidently to unexpected situations or emergencies. Additionally, organizational skills and attention to detail are important for managing clients' schedules, medications, and care plans accurately.

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Work prospects and opportunities for PWDs

Personal Care Assistants (PCAs) play a critical role in providing daily support and assistance to individuals in need. PWDs can work as PCAs depending on the nature of their disability or health conditions. Potential roles may include assisting with personal hygiene, grooming, dressing etc. and helping with daily activities, such as meal preparation, medication reminders, and companionship. They may also provide assistance tailored to specific needs, such as mobility support, communication aid, or medical assistance, support other PWDs in using assistive technologies, such as communication devices, mobility aids, or adaptive computer tools. In Community-Based settings, work roles refer to supporting PWDs or persons in need to take part in recreational activities, social events, and errands. This career path also highlights opportunities for PWDs to work closely with individuals in a comfortable and familiar environment providing peer support and understanding, and contributing significantly to their overall well-being.

Formal education (by country) [14]

Greece	Most employers prefer hiring a personal care assistant with at least a general upper secondary school leaving certificate. A personal care assistant rarely needs any higher or formal post-secondary education to enter this profession. These qualifications are equivalent to NQF Level 4 and EQF Level 4. A vocational school (EPAS) certificate in the specialty “general nursing assistant” (NQF Level 4 and EQF Level 4) or a vocational upper secondary school (EPAL) degree in the specialty “nurse assistant” (NQF Level 4 and EQF Level 4) or a vocational training diploma (post-secondary level) in the specialty “general nursing assistant” (NQF Level 5 and EQF Level 5) can increase the chances of getting hired at a better salary package as compared to others who don’t have any certification. Recommended educational paths include: General nursing assistant Vocational Schools (EPAS): https://www.dypa.gov.gr/bohthon-genikhs-noshlias Nurse assistant Vocational upper secondary school (EPAL) https://www.esos.gr/sites/default/files/articles-2023/fek-2023-tefxos_b-04040-downloaded_-23_06_2023.pdf General nursing assistant

[14] Please note that program availability and codes may be subject to change, so it is advisable to refer to the official websites of the universities for the most up-to-date information.

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	Vocational training institutes (IEK) http://www.iekdomi.gr/dimosia-iek.php
Italy	Most employers prefer hiring a personal care assistant with at least a general upper secondary school leaving certificate. These qualifications are equivalent to NQF Level 4 and EQF Level 4. A personal care assistant rarely needs any higher or formal post-secondary education to enter this profession, as practical skills and on-the-job training are often highly valued in this profession. Although not required, vocational training programs for Social Health Operator (Operatore Socio Sanitario) can provide a stronger foundation and enhance applicants' prospects. These programs are often offered by vocational schools, training institutes, public employment centers or regional healthcare agencies. These programs are designed to provide practical skills for assisting individuals in need of healthcare and social support. The training typically covers topics such as hygiene, patient care, communication skills, and basic medical procedures.
Cyprus	In Cyprus there are couple of Master degree EQF7 with a concentration in Primary Healthcare, which equips students with knowledge and understanding of the principles, values and organization of primary healthcare. The program provides students with clinical skills in prevention and management of the most common acute and chronic conditions in primary care. Recommended educational paths include: European University https://euc.ac.cy/en/programs/master-public-health-primary-healthcare-online/
Spain	In Spain, formal education to become a Personal Care Assistant generally does not involve obtaining a university degree, but requires a high school level education and, in some cases, the completion of training courses related to the care of the elderly or those with special needs. Technician in Care of People in a Situation of Dependency https://www.educaweb.com/estudio/titulacion-tecnico-atencion-personas-situacion-dependencia/ Superior Technician in Social Integration https://www.educaweb.com/estudio/titulacion-tecnico-superior-integracion-social/
Portugal	A personal care assistant typically doesn't require advanced or formal post-secondary education to pursue this career (NQF Level 4 and EQF Level 4). But there are vocational training programs aimed at the area of personal care assistance. Vocational training usually includes a technical course that teaches practical

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	skills related to personal care, such as helping with personal hygiene, mobility, food and drug administration. Higher Education Institutions like universities and polytechnics in Portugal can offer complementary training programs or short courses in the area of personal care and health care. Vocational Training Centers offers technical courses and training programs in the area of personal care and social assistance. Private Training Institutions also offers courses in the area of Personal Care Assistant. Higher Health school: Higher Health school of Sta Maria - https://www.santamariasaude.pt/ Training centers: Siner Consult - https://www.sinerconsult.pt/ Professional Schools: Gustave Eiffel Professional School - https://gustaveeiffel.pt/cursos-profissionais/
Belgium	Different paths can lead to a profession. This is an overview of the basic training(s) for this profession for each study level. There are often other possibilities. For a number of professions, specific training may be required by law. 3rd Grade SO Health and wellness sciences - *TSO* Youth and disabled care - *TSO* Organizational assistance - *BSO* Social and technical sciences - *TSO* Care - *BSO* 7th Specialization Year of BSO Organizational assistance Home and elderly care / healthcare Home and elderly care / healthcare *(modular)* Caregiver / medical dual

Career Progression

To progress within the career of personal care assistant one may want to undertake additional qualifications or enhance their skills so that they better understand their customers' conditions. Personal care assistants may become experts in a certain area (eg. learning disabilities, elderly care, dementia) according to their extensive knowledge and experience within the care industry.

With experience and further training, PCAs may advance to roles with increased responsibility, such as Senior PCA or Lead PCA, where they supervise and mentor junior staff while providing specialized care to clients. Further education or training may open doors to careers in healthcare administration, nursing, or allied health professions.

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Employment trends

Based on a targeted search in Cedefop Skills Intelligence Database, future job prospects for care workers in EU27 over the period 2022-2035 is 72, which means that there will be more job openings than number of current jobs in the occupations. Regarding top skills in online job advertisements for knowledge collected from EU27 in 2022, generic programmes and qualifications have the highest value with 11.1% while education has the lowest value, equal to 2.3%. Additionally, further information from international databases have shown that employment of personal care assistants is projected to grow 25 percent from 2021 to 2031, much faster than the average for all occupations. Following the demographic trends, personal care services will be in high demand due to the rising number of aging population. Both policy changes and lifestyle preferences of older adults and persons with disabilities may affect the care provision establishments. Long-term care services are increasingly shifting from institutional settings, such as nursing homes, to home- and community-based settings. This shift is expected to create many new jobs for home personal care assistants.

Resources

General	O*NET OnLine. https://www.onetonline.org/link/details/31-1122.00 U.S. Bureau of Labor Statistics. Occupational Outlook Handbook. https://www.bls.gov/ooh/healthcare/home-health-aides-and-personal-care-aides.htm#tab-1 Helping Hands. https://www.helpinghandshomecare.co.uk/home-care-services/ European Commission. ESCO. https://esco.ec.europa.eu/en/classification/occupation_main Cedefop https://www.cedefop.europa.eu/en/tools/skills-intelligence/occupations?occupation=5.53#9
Greece	athens home services (ahs) https://athenshomeservices.gr/en/services/home-senior-carers/ Greek Caregivers Network “Epioni” https://epioni.gr/
Italy	ISFOL - Alla scoperta dei Servizi alla persona Città dei Mestieri - Servizi alla persona Anziani e Vita https://anzianievita.it/
Cyprus	Cyprus Medical association: https://www.moh.gov.cy/Moh/MOH.nsf/page20_en/page20_en

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Spain	Information about the resources for the personal care: https://www.discapnet.es/mayores/el-cuidador/recursos-del-cuidador
Portugal	
Belgium	CEDEFOP Belgium Guidance System in Belgium (Flanders) https://www.onderwijskiezer.be/v2/beroepen/beroep_detail.php?beroep=166 https://competent.vdab.be/competent/release/current/occupationalprofile/OP-272

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Social Media Manager

Related occupations

Social media marketing manager, Social media director, Digital media manager, Digital marketing manager, Digital marketing specialist, Social media specialist.

Working Conditions

SOCIAL MEDIA MANAGERs work in both small and large organizations. They also work in advertising agencies that put together advertising campaigns for clients. Social media management can be a distinct role in larger organizations and is sometimes known as social media coordination. In small and medium-sized companies, the role may be combined with other marketing and communications responsibilities. In agencies, the term social media account manager is often used. A social media manager usually works normal office hours. However, they may work longer hours, including evenings and weekends, and work can often be stressful, particularly meeting deadlines. Full-time work is common, although part-time work and contract work is available. If they work on a freelance basis, they may work longer hours depending on the needs of the clients and the amount of work they are prepared to take on. There are also opportunities for hybrid working - split between home and the office. A social media manager spends most of the time online either making posts themselves or collaborating with social media specialists and interns to coordinate cross-platform campaigns. Because the work of the social media manager directly affects a firm's revenue, people in these occupations typically work closely with top executives.

Responsibilities, knowledge, Competences and skills, expected results

Core Activities and Tasks

Social Media Managers are responsible for developing, implementing, and managing an organization's social media strategy. Their core activities and tasks include creating engaging content, such as posts, videos, and graphics, tailored to the target audience and platform. They monitor social media channels, responding to comments, messages, and mentions, and engaging with followers to build relationships and foster community engagement. Social Media Managers analyze performance metrics and insights to track the effectiveness of campaigns, identify trends, and make data-driven recommendations for optimizing social media presence. They stay updated on emerging trends, algorithms, and best practices in social media marketing to ensure content remains relevant and impactful. Additionally, Social Media Managers collaborate with other teams, such as marketing, communications, and customer service, to align social media efforts with broader organizational goals and initiatives.

Knowledge, competences, and skills

Social Media Managers require a a deep understanding of various social media platforms, including their features, algorithms, and best practices for content creation and engagement. Strong communication skills, both written and verbal, are essential for crafting compelling content, engaging with followers, and conveying brand messaging effectively. They must be proficient in analytics tools to track and interpret key performance metrics, enabling them to assess the success of campaigns and make data-driven decisions for optimization. Creativity and strategic thinking are critical for developing innovative content ideas and campaigns that resonate with target audiences and drive engagement and conversions.

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Additionally, adaptability and agility are important qualities as social media trends and algorithms are constantly evolving. Collaborative skills are also necessary for working effectively with cross-functional teams and stakeholders to align social media efforts with broader organizational objectives.

Work prospects and opportunities for PWDs

Social media management is a dynamic and inclusive field for individuals with different types of disabilities. Managing social media accounts and campaigns remotely provides flexible career options and opportunities. Choosing social media management tools that are accessible and compatible with assistive technologies is a prerequisite. Potential domains for PWDs interested in pursuing a career as social media managers may involve: content creation, social media planning, social media branding, building and managing online communities, analyzing data and performance metrics, planning and coordinating virtual events on social media platforms, coordinating social media campaigns etc. PWDs can also engage in the development of inclusive social media strategies and tools that consider accessibility features and accommodate disabled users.

Formal education (by country) [15]

Greece	Social media managers typically hold a bachelor's degree (NQF Level 6 and EQF Level 6) or a vocational training diploma (post-secondary level – IEK) (NQF Level 5 and EQF Level 5) or a vocational upper secondary school (EPAL) (NQF Level 4 and EQF Level 4). While social media is still a newer field, there are options for the field of study. Typically, a degree in journalism, communications, marketing, or public relations can provide a solid foundation. Recommended educational paths include: Marketing and advertising officer Vocational upper secondary school (EPAL) https://www.minedu.gov.gr/texniki-ekpaideusi-2/stoixeia-epal-p-epal-ek/tomeis-eidikotites-ana-pde-epal-2021-2022 https://www.esos.gr/sites/default/files/articles-2023/fek-2023-tefxos_b-04040-downloaded_-23_06_2023.pdf Sales, advertising & product promotion executive (Marketing) Vocational training institutes (IEK) http://www.iekdomi.gr/dimosia-iek.php Bachelor's degree in marketing and communication

[15] Please note that program availability and codes may be subject to change, so it is advisable to refer to the official websites of the universities for the most up-to-date information.

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	Department of marketing & communication Athens university of economics and business Bachelor's degree in Business Administration with a major in Marketing and Operations Management Department of business administration University of Macedonia Bachelor's degree in marketing and communication Department of Organization Management, Marketing and Tourism International Hellenic University Bachelor's degree in journalism Department of journalism & mass communications Aristotle University of Thessaloniki Bachelor's degree in communication and mass media Department of communication and media studies National and Kapodistrian University of Athens Bachelor's degree in journalism, advertising and public relations Department of Communication, Media and Culture Panteion University of Social and Political Sciences Bachelor's degree in marketing Department of commerce and marketing Technological educational institution of Crete
Italy	To work as a Social Media Manager in Italy, a combination of formal education, relevant skills, and practical experience is typically required. Social media managers typically hold a bachelor's degree (NQF Level 6 and EQF Level 6) or, after the upper secondary education (NQF Level 4 and EQF Level 4) attend vocational training programs or short courses related to digital marketing, social media management, or communication. These programs can provide practical skills and insights into the dynamics of social media. While it's not mandatory to have a university degree, obtaining a bachelor's or master's degree in relevant fields can enhance your knowledge and marketability. Potential university programs are included below.

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	University Bachelor's Programs (Laurea Triennale, NQF:6, EQF:6): - Communication Sciences (Scienze della Comunicazione), class L-20 University Master's Programs (Laurea Specialistica, NQF:7, EQF:7): - Marketing and Communication (Marketing e Comunicazione), class LM-77 - Digital Communication and Multimedia (Comunicazione Digitale e Multimediale), class LM-92 - Media Studies (Scienze dei Media), class LM-89 Before choosing a program, it's advisable to check the specific details and curriculum of the programs offered by individual universities. A useful website to do it is Universitaly. In addition to formal education, consider obtaining relevant certifications in social media management platforms (e.g., Facebook Blueprint, Google Ads Certification). Building a strong portfolio of practical experience and showcasing proficiency in popular social media tools is crucial for this role. Social media management is a dynamic field, and staying updated with the latest trends and technologies is essential. Practical experience gained through internships, freelance work, or personal projects is often highly valued in the industry. Keep in mind that the specific educational and skill requirements can vary based on employer preferences and the evolving nature of social media platforms
Cyprus	In Cyprus, to pursue a career as a Social Media Manager, it is typically expected that you have a qualification that aligns with EQF Level 6 or vocational training. This level of qualification demonstrates a higher education degree or equivalent that is often necessary for roles requiring strategic planning, content management, and marketing expertise in the field of social media management. Having an EQF Level 6 qualification signifies a solid educational foundation and expertise in the area of social media and digital marketing. Recommended educational paths include: UNIC: https://www.unic.ac.cy/business-administration-information-systems-and-social-media-bba-4-years/ European University: https://euc.ac.cy/en/programs/bachelor-marketing-digital-communications-online/ European University: https://euc.ac.cy/en/programs/bachelor-marketing-digital-communications/ SCP Academy: https://scp.ac.cy/courses/using-social-media-inbusiness/

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Spain	Social media managers need an EQF 6 university education and, in some cases, an EQF 7 level with a more specific marketing background is required. Bachelor's Degree in Marketing https://www.educaweb.com/estudio/titulacion-grado-marketing/ Bachelor's Degree in Advertising https://www.educaweb.com/estudio/titulacion-grado-publicidad/ Bachelor's Degree in Journalism https://www.educaweb.com/estudio/titulacion-grado-periodismo/ Master in Digital Marketing https://www.educaweb.com/estudio/titulacion-master-oficial-marketing-digital/ Master in Digital Communication https://www.educaweb.com/masters-oficiales-de/comunicacion-digital/
Portugal	In Portugal, there are no specific undergraduate courses to become a Social Media Manager in the traditional way. However, pursuing secondary education (10th to 12th grade) and choosing a course that is related to communication, digital marketing, advertising, and related fields that will provide the necessary foundation for a career in social media management (NQF Level 4 and 5 and EQF Level 4 and 5). Training in Digital Marketing and Social Networks: Specific training in digital marketing and social network management is essential. There are courses and workshops that address digital marketing strategies, online advertising, data analysis and use of social media management tools. Some higher education courses (NQF level 6 and EQF level 6) are also an asset for embarking on this profession, such as marketing, advertising, web design, graphic design Here are some areas of study and institutions where it is possible to acquire relevant knowledge: **Higher graduation**: Portuguese Institute of Marketing Administration - https://www.ipam.pt/ University of Aveiro - https://www.ua.pt/pt/curso/1585

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	NOVA University of Lisbon - https://guia.unl.pt/pt/2019/novaims/program/4975/course/200083#general-characterization Graphic design school - https://esd.ipca.pt/curso/design-grafico/ Faculty of Design, Technology and Communication at the European University - https://www.iade.europeia.pt/ **VET Schools:** Multimedia Professional school of communication and image - https://epci.pt/ Porto commerce school - https://www.ecpescolacomercioporto.pt/ Gustave Eiffel Professional School - https://gustaveeiffel.pt/
Belgium	Different paths can lead to a certain profession. This is an overview of the basic training(s) for each study level. There are often other possibilities. For a number of professions, specific training may be required by law. Academically oriented bachelor's programmes aim to prepare for a master's degree and not directly on this profession. They are listed here to indicate the entry level of the training. HO - Bachelor's Communication : Commercial Communication *(Professional Bachelor - HO)* Communication : Event, concept and organization *(Professional bachelor - HO)* Communication : Public relations and information *(Professional bachelor - HO)* Communication : without specific specialisations *(Professional Bachelor - HO)* International Communication and Media - ICM (E) *(Professional Bachelor - HO)* Networking Economics *(Professional Bachelor - HO)* Communication Sciences *(Academic Bachelor's - HO)* The social sciences : Communication Studies (E) *(Academic Bachelor - HO)* HO - Master Business Communications *(Master - HO)* Communication sciences : Communication Management *(Master - HO)* Communication sciences : Media and Society *(Master - HO)* Communication sciences : Media, strategy and marketing *(Master - HO)* Communication sciences : Media Studies *(Master - HO)* Communication sciences : New media and society *(Master - HO)* Communication sciences : Strategy and organisation *(Master - HO)* Communication sciences : Strategic Communication *(Master - HO)* Communication studies : Digital Media in Europe (E) *(Master - HO)* Communication studies : Journalism and Media in Europe (E) *(Master - HO)* HO - MA-na-MA Multilingual Business Communication *(Master-after-master - HO)* Syntra training courses

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	Communications Advisor VDAB courses: Social media manager/Verantwoordelijke externe communicatie

Career Progression

Career progression for Social Media Managers often begins with entry-level positions where individuals gain foundational experience in managing social media accounts, creating content, and analyzing metrics. As they accumulate experience and demonstrate proficiency in executing successful social media strategies, they may advance to mid-level roles with increased responsibilities, such as Senior Social Media Manager or Social Media Strategist. In these positions, they may oversee larger campaigns, manage a team of social media specialists, or take on additional responsibilities related to brand management and strategy development. With further experience and a track record of delivering results, Social Media Managers may progress to managerial or director-level positions, where they have broader oversight of an organization's entire social media presence, set strategic objectives, and allocate resources accordingly. Some Social Media Managers may also choose to specialize in specific areas such as influencer marketing, content strategy, or social media advertising.

Employment trends

Social Media Managers play a crucial role in today's digital landscape, and their job prospects are generally promising. With the increasing importance of social media in business and marketing strategies, organizations across various industries continue to recognize the value of skilled professionals who can effectively manage their online presence and engage with audiences. Moreover, the continued rise of electronic media will result in increasing demand for digital media campaigns that target customers through the use of websites, social media, or live chats. Additionally, the evolution of social media platforms and the emergence of new trends present continuous opportunities for Social Media Managers, as businesses strive to maintain a competitive edge and build meaningful connections with customers.

Resources

General	Workable. Resources for employers. https://resources.workable.com/social-media-manager-job-description Forbes Advisor. https://www.forbes.com/advisor/business/social-media-manager-job-description/ European Commission. ESCO. https://esco.ec.europa.eu/en/classification/occupation_main O*NET OnLine. https://www.onetonline.org/link/summary/11-2021.00 U.S. Bureau of Labor Statistics. Occupational Outlook Handbook. https://www.bls.gov/ooh/management/advertising-promotions-and-marketing-managers.htm#tab-1 Prospects. https://www.prospects.ac.uk/job-profiles/social-media-manager

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	emplify https://emplifi.io/resources/blog/social-media-manager-evolution
Greece	Social Media Manager jobs in Greece - Linkedin https://gr.linkedin.com/jobs/social-media-manager-jobs?position=1&pageNum=0 Glassdoor https://www.glassdoor.com/Job/greece-social-media-manager-jobs-SRCH_IL.0,6_IN100_KO7,27.htm careerjet https://www.careerjet.gr/%CE%B8%CE%B5%CF%83%CE%B5%CE%B9%CF%82-%CE%B5%CF%81%CE%B3%CE%B1%CF%83%CE%B9%CE%B1-social-media-manager.html
Italy	Associazione Nazionale Social Media Menager www.ansmm.it Associazione Italiana Sviluppo Marketing www.aism.org Associazione Professionale Nazionale Social Media e Social Network www.assosocial.it Smart Marketing www.smarknews.it Pubblicità Italia www.pubblicitaitalia.it Web Marketing Tools www.wmtools.com Spot and Web www.spotandweb.it/#gref
Cyprus	• Cyprus Social Media Associationhttps://www.icwsm.org/2023/index.html/ • Cyprus Communication Association https://contentworks.agency/social-media-in-cyprus-the-stats-you-need-to-know/
Spain	23 tools to monitor your brand on social networks in 2023: https://blog.hubspot.es/marketing/10-herramientas-gratuitas-para-monitorear-tu-marca-en-redes-sociales Conference "Social Networks for Professionals: https://icadeasociacion.com/conferencia-redes-sociales-para-profesionales-el-riesgo-y-los-beneficios-que-no-conoces-18-05-2023-1930-h/ Marketing Association in Spain: https://www.asociacionmkt.es/
Portugal	
Belgium	CEDEFOP Belgium Guidance System in Belgium (Flanders) https://www.onderwijskiezer.be/v2/beroepen/beroep_detail.php?beroep=123

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	https://competent.vdab.be/competent/release/current/occupationalprofile/OP-697

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Software developer

Related professions

Software Architect, Web designer.

Working Conditions

SOFTWARE DEVELOPERs design, create, and maintain computer applications and systems. They write code, troubleshoot issues, and collaborate with teams to develop software solutions. Software Developers contribute to various industries, from web and mobile app development to enterprise software, playing a pivotal role in shaping the digital landscape. Many aspects of software development can be done remotely, providing flexibility in work arrangements. However, challenges may include prolonged periods of sitting, working long hours or tight project deadlines.

Responsibilities, Knowledge, Competences and skills, expected results

Core activities and tasks

Software developers engage in a variety of core activities and tasks aimed at designing, building, and maintaining software systems. They begin by analyzing user needs and requirements, collaborating with stakeholders to understand project objectives. They design software solutions, creating detailed technical specifications and architecture diagrams. Through coding, they implement these designs, writing clean, efficient, and maintainable code while adhering to best practices and coding standards. Throughout the development process, software developers conduct testing and debugging to identify and resolve issues, ensuring the quality and functionality of the software. Collaboration with other team members, such as designers and testers, is crucial for integration and deployment.

Knowledge, Competences and Skills

Software developers need a deep understanding of programming languages, algorithms, data structures, and software development methodologies to design and implement efficient and scalable solutions. Strong problem-solving and analytical skills are essential for identifying and resolving technical challenges and optimizing code performance. Effective communication, client orientation, and collaboration skills enable them to work closely with stakeholders, such as clients and team members, to gather requirements, provide updates, and incorporate feedback throughout the development process. Attention to detail, accuracy and a commitment to quality are crucial for writing clean, maintainable code and conducting thorough testing to ensure software reliability. Adaptability and a willingness to learn are also important traits, as software development is a rapidly evolving field, requiring developers to stay updated on emerging technologies and best practices to remain competitive and innovative. Additionally, soft skills such as time management, creativity, innovation, and teamwork contribute to successful project execution and career growth in the software development industry.

Work prospects and opportunities for PWDs

Software development can be a rewarding and fulfilling career path for PWDs. Accommodations and advanced assistive technologies are essential for enabling them to perform all the relevant tasks. Screen

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readers, code analysis tools, gaze interaction, speech recognition, open source code dictation programs such as VoiceCode, and large mechanical switches are available to make programming and coding more accessible for individuals with physical impairments. Remote work and platform-based projects offer flexibility and adaptation to their needs and working style preferences. Some promising software development roles and expertise for PWDs include: application development, web development, software engineering, quality assurance engineering, accessibility engineering, database development, front-end development, back-end development, mobile app development, security engineering, machine learning engineering etc.

Formal education (by country) [16]

Greece	A formal education in computer science or a related field is typically required to become a software developer. While some positions may accept candidates with a certificate from upper secondary education (NQF Level 4 and EQF Level 4) combined with a vocational training course in the field, most employers prefer candidates with at least a vocational upper secondary school (EPAL) (NQF Level 4 and EQF Level 4) or vocational training diploma (post-secondary level – IEK) (NQF Level 5 and EQF Level 5). Qualifications at a Bachelor's (NQF Level and EQF Level 6)or Master's level (NQF Level 7 and EQF Level 7) are strongly desired. Here are some educational requirements and degree options for aspiring software developers: Vocational upper secondary school (EPAL) Informatics and Networks Technician Vocational training institutes (IEK) Software Technician Bachelor's degree in Applied Computer Science. Fields of study: a) Applied Computer Science, b) Technology Management. Department of Applied Computer Science. School of Information Sciences. University of Macedonia. Bachelor's degree in Computer Engineering (T.E.). Department of Computer Engineering (T.E.). School of Technological Applications. Alexandrio Technological Educational Institute of Thessaloniki. Bachelor's degree in Informatics. Department of Informatics. School of Sciences.

[16] Please note that program availability and codes may be subject to change, so it is advisable to refer to the official websites of the universities for the most up-to-date information.

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	University of Western Macedonia. Bachelor's degree in Computer Engineering Technological Education. Department of Computer Engineering of Technological Education. Technological Educational Institution of Central Greece Bachelor's degree in Digital Systems. Department of Digital Systems. School of Information and Communication Technologies. University of Piraeus. Bachelor's degree in Informatics Department of Informatics, University of Piraeus Bachelor's degree in Computer Engineering Technology, with Advanced Semester Directions: Network Engineering, Computer Engineering, Software Engineering. Department of Information Technology Engineering, School of Technological Applications. Technological Educational Institute of Crete. Bachelor's degree in Computer Engineering. Department of Computer and Information Engineering. School of Engineering. University of West Attica. Bachelor's degree in Computer Engineering and Informatics Department of Computer Engineering and Informatics. Faculty of Engineering University of Ioannina MSc in Applied Informatics, University of Macedonia MSc in Informatics and Applications, University of West Attica MSc in Advanced Informatics and Computing Systems – Software Development and Artificial Intelligence, University of Piraeus
Italy	There are no specific requirements to practice the profession of SOFTWARE DEVELOPER. There are no professional registers or binding regulatory references. A University degree, at least three years (NF: 6, EQF: 6), in Computer Science, Mathematics or Computer Engineering is strongly recommended, although it is possible to acquire the necessary skills also through courses organized by professional training centers or by the Regions, or through programming theory courses held by IT companies.

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	University preparation can be further developed with specialized courses and masters. The experience gained in the field will allow the acquisition of additional interdisciplinary skills and knowledge, essential for establishing oneself in the profession. In order to qualify as a Software Developer, possession of the EUCIP1[17] "Core" level certification is recommended, obtainable by passing the EUCIP1 tests required for this figure. The Software Developer with a degree in Engineering or Computer Science is advised to enroll in the Register of Computer Engineers (Albo Ingegneri Informatici) which cannot be accessed, however, by graduates from other degree courses. Here are some common educational qualifications that can be beneficial for a Software Developer: University Bachelor's Programs (Laurea Triennale, NQF:6, EQF:6): - Computer Science (Informatica), class L-31 - Computer Engineering (Ingegneria Informatica). Class L-8 University Master's Programs (Laurea Specialistica, NQF:7, EQF:7): - Computer Engineering (Ingegneria Informatica), class LM-32 - Mathematics (Matematica), class LM-40 - Computer methodologies for the humanities (Metodologie informatiche per le discipline umanistiche), class LM-43 Before choosing a program, it's advisable to check the specific details and curriculum of the programs offered by individual universities. A useful website to do it is Universitaly.
Cyprus	
Spain	The formal education required to become a Software Developer usually includes a college degree or a technical training program related to computer science and programming. Higher Level Training Cycles related to programming https://www.educaweb.com/ciclos-formativos-grado-superior/programacion/ Degree in Computer Engineering

[17] EUCIP is the CEPIS European standard for the skills of ICT professionals. It is a complete system of services and certifications, independent of suppliers, a reference in the world of IT professions, business and training.

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	https://www.educaweb.com/estudio/titulacion-grado-ingenieria-informatica/
Portugal	In Portugal, to become a software developer, there are no specific legal requirements in terms of mandatory formal education. However, most software developers acquire an academic higher education (NQF level 6 and EQF level 6) in Informatics, Software Engineering, Computer Engineering, Computer Science or related fields. Portugal has several universities and polytechnic institutes that offer these courses. A specialization in programming languages relevant to the labor market is important. The most common languages include Java, C++, Python, JavaScript, among others. **Relevant higher education courses** Degree in Computer Engineering or Software Engineering · University of Lisbon – https://www.ulisboa.pt/ · University of Porto – https://www.up.pt/portal/pt/ · Instituto Politécnico de Lisboa – https://www.ipl.pt/ Degree in Computer Science · University of Coimbra – https://www.uc.pt/ · University of Minho – https://www.uminho.pt/PT Degree in Engineering of Computers and Networks University of Aveiro – https://www.ua.pt/
Belgium	Different paths can lead to a certain profession. This is an overview of the basic training(s) for each study level. There are often other possibilities. For a number of professions, specific training may be required by law. Academically oriented bachelor's programmes aim to prepare for a master's degree and not directly on this profession. They are listed here to indicate the entry level of the training. HO – Bachelor's Electronics ICT : ICT € *(Professional bachelor – HO)* Electronics – ICT : ICT *(Professional bachelor – HO)* Applied Informatics : Application Development *(Professional Bachelor – HO)* Applied Informatics : Artificial Intelligence *(Professional Bachelor – HO)* Applied Informatics : Software Management *(Professional Bachelor – HO)* Applied Informatics : Systems and Network Management *(Professional Bachelor – HO)* Applied Informatics : without specific specialisations *(Professional Bachelor – HO)* Commercial Engineer *(Academic Bachelor – HO)* The Industrial Sciences : Electronics-ICT *(Academic bachelor – HO)* The Industrial Sciences : Computer Science *(Academic Bachelor – HO)* Computer Science *(Academic Bachelor – HO)*

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	Engineering: Computer Science *(Academic Bachelor – HO)* HO – Master The Applied Economic Science: Economic policy € *(Master – HO)* Applied sciences and engineering: Computer science € *(Master – HO)* Electrical Engineering : Electronic circuits and systems € *(Master – HO)* Engineering: Computer Science € *(Master – HO)* Trade Engineer in Policy Informatics *(Master – HO)* Industrial sciences Electronics – ICT : ICT *(Master – HO)* Industrial sciences Electronics – ICT : without specific specializations *(Master – HO)* Industrial sciences (*Master – HO)* Computer science : Computer networks *(Master – HO)* Computer science : Data science and artificial intelligence *(Master – HO)* Computer science : Software engineering *(Master – HO)* Computer science : without specific specializations *(Master – HO)* Information Management *(Master – HO)* Information Management € *(Master – HO)* Engineering Computer Science *(Master – HO)* Engineering Sciences Electronics and Information Technology *(Master – HO)* Applied Informatics *(Master – HO)* HO – MA-na-MA Artificial Intelligence € *(Master-na-master – HO)* HO – Postgraduates Applied artificial intelligence € *(Postgraduate degree)* VDAB courses: Software ontwikkelaar

Career Progression

Entry-level software developers by gaining experience and expertise, they may advance to lead, management or senior roles, overseeing projects and junior team members. They may choose to specialize further, focusing on areas like mobile app development, web development, cloud computing, or artificial intelligence. They may transition into roles such as software architect, technical lead, or project manager or engage in freelancing and entrepreneurship. Continuous learning, staying updated on industry trends, and building a strong portfolio of projects are essential for career advancement in software development.

Employment trends

Software developers, systems analysts, and applications programmers were cited as being in severe shortage and the most demanded ICT occupations. (European Labour Authority, 2021). According to Cedefop (2023), the Information and communication (ICT) sector is one of the most rapidly evolving sectors in the EU. ICT professionals, who mainly work in the ICT sector, accounted for around 2 per cent of all employment in the EU in 2022. These workers are important for the digital transformation that is currently taking place across several European economic sectors. Between 2012 and 2022 employment for ICT professionals increased by 90 per cent. Between 2019 and 2020 and despite the economic lockdowns experienced across the EU, almost 300 thousand new ICT professional jobs were created.

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Employment increased further in the following year, and by the end of 2022 it was 1 million workers above its 2019 level. Most ICT professionals (80 per cent) have attained a qualification level of ISCED 5 or above in 2021, equivalent to the first stage of tertiary education. The qualification level of the occupation is not expected to change over the period to 2035. ICT professionals are mainly men (82 per cent in 2021). The employment of ICT professionals is projected to increase by 30 per cent between 2022 and 2035. Most of the future ICT professionals will require multi-disciplinary 'T-shaped' skillsets, meaning that individuals in the ICT sector will need to have a broad range of skills complemented by one or two specialisations where they develop expert knowledge, including data analysis, cybersecurity, sustainability, and business relations. Also, the increasing spread of Artificial Intelligence (AI), Machine Learning (ML), Cloud computing, big data management, and Internet of Things (IoT) across different industries as well as the need for the development and deployment of greener digital technologies will require the expertise of high-skilled professionals in this domain.

Resources (by country)

General	Council of European Professional Informatics Societies https://cepis.org/ ICDL www.icdl.it IDCERT https://it.idcert.io/ WIRED www.wired.com Computer World www.computerworld.com MIT Technology review www.technologyreview.com SD times https://sdtimes.com/ Cedefop. https://www.cedefop.europa.eu/en/tools/skills-intelligence/sectors?sector=05.10#2
Greece	Top 60 software development companies in Greece https://themanifest.com/gr/software-development/companies Game Developers Association Greece https://www.gamedev.gr/en Software Developer jobs in Greece – Linkedin https://gr.linkedin.com/jobs/software-developer-jobs?position=1&pageNum=0
Italy	AIP – Associazione Informatici Professionisti web.aipitcs.it Associazione Italiana per l'Information Technology www.anitec-assinform.it European Certification of Informatics Professionals

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	Albo Nazionale Informatici Professionisti www.alboinformatici.com Wired Italia www.wired.it ICTBusiness.it www.ictbusiness.it Furthermore, it is important to know that in Italy every year there are two crucial events for all those who deal with ICT: ● Smau (Milano): Esposizione Internazionale di Information & Communications Technology www.smau.it/milano/ ● FuturShow (): Esposizione Internazionale di Information & Communications Technology
Cyprus	In Cyprus, to pursue a career as a Software Developer, it is typically expected that you have a qualification that aligns with EQF Level 6 or vocational training. This level of qualification demonstrates a higher education degree or equivalent that is often necessary for roles requiring in-depth knowledge of software development, programming languages, and software engineering principles. Having an EQF Level 6 qualification signifies a solid educational foundation and expertise in the field of software development. Recommended educational paths include: UNIC: https://register.unic.ac.cy/el/study-computer-engineering-bsc/?utm_source=Google&utm_medium=Search&utm_campaign=Computer-Engineering-Greece-Cyprus&utm_term=computer%20engineering&gad_source=1&gclid=CjwKCAiAx_GqBhBQEiwAlDNAZoZsnNNy3B4uio72rTj1OhJWUUnlbbq2Riw0GyS3Zao6x8NvNDtzshoC900QavD_BwE European University: https://euc.ac.cy/en/programs/bachelor-computer-engineering/ Cyprus University: https://www.cs.ucy.ac.cy/index.php/admissions/39-news/announcements/679-distance-learning-master-on-cognitive-systems-human-computer-symbiosis SCP Academy: https://scp.ac.cy/course-category/programming-languages/
Spain	10 software development tools preferred by developers: https://es.indeed.com/orientacion-laboral/desarrollo-profesional/herramientas-desarrollo-software Software Developers Association (ULE): https://www.linkedin.com/company/ads-ule/?originalSubdomain=es
Portugal	Desenvolvedores de software: Saiba tudo sobre esta profissão (guiadasprofissoes.info)
Belgium	CEDEFOP Belgium Guidance System in Belgium (Flanders)

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	https://www.onderwijskiezer.be/v2/beroepen/beroep_detail.php?beroep=1903 https://competent.vdab.be/competent/release/current/occupationalprofile/OP-735

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Specialist in Renewable or Alternative Energy

Related professions

Renewable Energies Technician, Renewable Energy Project Manager

Working Conditions

SPECIALISTs IN RENEWABLE OR ALTERNATIVE ENERGY specialize in the development, implementation, and maintenance of technologies and systems that harness renewable resources or alternative sources of energy, including Solar Energy, Wind Energy, Biomass Energy, Hydroelectric Energy, Geothermal Energy and Ocean Energy. These specialists may work in research institutions, government agencies, energy companies, consulting firms, or non-profit organizations dedicated to advancing renewable and alternative energy technologies. They can specialize in various branches of the energy sector (photovoltaic (PV) technology, solar thermal systems, and concentrated solar power (CSP), heat recovery, wind turbines and wind farms, biofuels, hydroelectric power plants, industrial energy saving, etc.) Working conditions can vary depending on their specific field and employer. They may spend time in offices conducting research, designing systems, or analyzing data related to renewable energy projects. Fieldwork is also common, involving visits to project sites for installation, maintenance, or troubleshooting of renewable energy systems such as solar arrays, wind turbines, or hydroelectric plants. They may collaborate with engineers, scientists, policymakers, and other stakeholders to develop and implement innovative solutions for harnessing sustainable energy sources. Some challenges may involve working in remote locations, navigating regulatory hurdles, or managing project timelines and budgets effectively. These specialists play a crucial role in addressing climate change, reducing greenhouse gas emissions, and transitioning towards a more sustainable energy future.

Responsibilities, knowledge, competences and skills, expected results

Core activities and tasks

Specialists in renewable or alternative energy may perform a variety of core activities and tasks aimed at advancing sustainable energy solutions. They may conduct research and development to improve existing technologies or develop innovative solutions for harnessing renewable resources such as solar, wind, biomass, hydroelectric, geothermal, and ocean energy. They often analyze data, conduct feasibility studies, and assess the environmental and economic impacts of renewable energy projects. Specialists in this field may also design, engineer, and oversee the construction of renewable energy systems, ensuring compliance with regulations and standards. They may also work as technicians, installing, maintaining, and repairing equipment that provides renewable energy power sources. Additionally, they may work on energy policy development, advocating for supportive policies and incentives to promote the adoption of renewable energy technologies.

Knowledge, competences and skills

Specialists in renewable or alternative energy need a solid understanding of renewable energy technologies and systems, including their design, operation, and integration into existing energy infrastructure. Proficiency in areas such as energy physics, engineering principles, and environmental science is essential. Additionally, expertise in data analysis, modeling, and simulation techniques is often necessary for assessing the performance and viability of renewable energy projects. Strong

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problem-solving abilities and critical thinking skills are vital for addressing technical challenges and optimizing energy systems for maximum efficiency and reliability. Effective communication and collaboration skills are also crucial for engaging with engineers, scientists, policymakers, and other stakeholders.

Work prospects and opportunities for PWDs

The renewable energy sector provides diverse opportunities for PWDs to contribute to the sustainable development of clean energy solutions. In the role of a Specialist in Renewable or Alternative Energy, accommodations such as accessible design software and adaptive lab equipment empower individuals with disabilities to contribute effectively. Advanced assistive technologies can aid, for example, in data analysis and research. New work paradigms like remote collaboration and on-demand project engagement allow for more flexible and inclusive work. PWDs can easily engage in several tasks and roles involving for example:

- overseeing the planning, development, and implementation of renewable energy projects.
- managing project timelines, budgets, and teams to ensure successful completion of renewable energy initiatives.
- analyzing data and trends in the renewable energy sector
- technical support tasks in Installing, maintaining, and repairing renewable energy equipment and systems such as solar panels, photovoltaic systems, wind turbines, hydropower systems etc.
- assessing the environmental impact of renewable energy projects and proposing mitigation strategies.
- providing expert advice to organizations on implementing renewable energy solutions.

Formal education (by country) [18]

Greece	The education needed to be a specialist in renewable or alternative energy is normally a bachelor's (NQF Level 6 and EQF Level 6) or a master's degree (NQF Level 7 and EQF Level 7) in the related field. Relevant study programmes are found below: ● Bachelor's in chemical and environmental engineering School of Chemical and Environmental Engineering, Technical University of Crete ● Bachelor's degree in electrical and computer engineering School of Electrical and Computer Engineering, National Technical University of Athens ● Bachelor's in Mechanical Engineering School of Mechanical Engineering, National Technical University of Athens ● Bachelor's in Electrical Engineering and Computer Technology Department of Electrical Engineering and Computer Technology, Polytechnic School of the University of Patras

[18] Please note that program availability and codes may be subject to change, so it is advisable to refer to the official websites of the universities for the most up-to-date information.

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	• Bachelor's degree in Mineral Resources Engineering School of Mineral Resources Engineering, Technical University of Crete • Bachelor's in Mechanical Engineering School of Mechanical Engineering, Aristotle University of Thessaloniki • MSc in Energy and Automation Systems, University of Thessaly • MSc in Innovation in Technology & Engineering Management, International Hellenic University • MSc in Sustainable Engineering and Climate Change, Technical University of Crete • MSc in Energy Production & Management, National Technical University of Athens • MSc in Green Power Systems: Smart Technologies and Management Strategies, Polytechnic School of the University of Patras
Italy	To be a renewable energy specialist, a background in math and science is recommended. It's helpful to take additional courses in economics, agriculture, environmental engineering, speech, communications, computer science, and low. For most positions, a bachelor's degree with experience is recommended. For a government or private consulting position, a master's or doctoral degree is recommended. The best place to start for a future Renewable Energy Specialist is with a bachelor's degree in Renewable Energy Management, Renewable energy engineering, Environmental science, Electrical engineering, or a related discipline. Below are some common educational qualifications that can be beneficial for a Renewable Energy Specialist. University Bachelor's Programs (Laurea Triennale, NQF:6, EQF:6): - Materials science and technology (Scienza e tecnologia dei materiali), class L-27 - Sciences and technologies for the environment and nature (Scienze e tecnologie per l'ambiente e la natura), class L-32 - Engineering for the Environment and Territory (Ingegneria per l'Ambiente ed il Territorio), class L-7 - Energy engineering (Ingegneria Energetica), class L-9 University Master's Programs (Laurea Specialistica, NQF:7, EQF:7): - Environmental and Land Planning Engineering (Ingegneria per l'Ambiente e il Territorio), class LM-35
Cyprus	In Cyprus, to pursue a career as a Specialist in Renewable or Alternative Energy, it is typically expected that you have a qualification that aligns with EQF Level 6 or higher. This level of qualification demonstrates a higher education degree or equivalent that is often necessary for

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	roles requiring expertise in renewable and alternative energy sources, sustainable energy systems, and environmental sustainability. Having an EQF Level 6 qualification signifies a solid educational foundation and expertise in the field of renewable and alternative energy. Recommended educational paths include: Frederich University: https://www.frederick.ac.cy/en/msc-in-energy-engineering University of cyprus: https://www.ouc.ac.cy/index.php/el/studies/programmes/master/master-ses
Spain	No specific qualifications are required. Degree in Renewable Energy Engineering https://www.educaweb.com/estudio/titulacion-grado-ingenieria-energias-renovables/ Degree in Energy Engineering https://www.educaweb.com/estudio/titulacion-grado-ingenieria-energia/ Degree in Environmental Engineering https://www.educaweb.com/estudio/titulacion-grado-ingenieria-ambiental/ Master in Renewable Energies https://www.educaweb.com/estudio/titulacion-master-oficial-energias-renovables/ Official Master's Degree in Renewable Energies and Energy Efficiency https://www.educaweb.com/estudio/titulacion-master-oficial-energias-renovables-eficiencia-energetica/
Portugal	To become a renewable energy specialist in Portugal, it is normally necessary to follow a specific academic path in the field of Engineering, Physics, Environment or related areas (NQF level 6 and EQF level 6). After graduating, many professionals choose to pursue a master's degree in Renewable Energy or in related areas, such as Sustainable Energy, Energy Engineering or Environmental Technologies. **Relevant courses** Engineering of Renewable Energies · Instituto Superior Técnico (IST) da University of Lisbon - https://tecnico.ulisboa.pt/pt/ · University of Minho - https://www.uminho.pt/PT Environmental Engineering · University of Aveiro - https://www.ua.pt/ · University of Porto - https://www.up.pt/portal/pt/

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	Electrical and Computer Engineering · Instituto Superior Técnico (IST) - Instituto Superior Técnico (IST) da University of Lisbon - https://tecnico.ulisboa.pt/pt/ · University of Coimbra - https://www.uc.pt/ Science of Energy and Environment · University of Évora - https://www.uevora.pt/ · University of Lisbon - https://www.ulisboa.pt/ Energy Management Instituto Superior Técnico (IST) - https://tecnico.ulisboa.pt/pt/
Belgium	

Career Progression

Entry-level positions may include roles like research assistants, technicians, or junior engineers at renewable energy companies, government agencies, or research institutions. Experience and further education or certifications to enhance expertise and develop specialized skills in a specific area of renewable energy, such as solar photovoltaics, wind energy, bioenergy, hydroelectric power, or energy storage, may lead to mid-level positions such as project engineer, project manager, renewable energy consultant, or energy analyst. Progress to senior management positions may involve management of renewable energy projects and programs manager and renewable energy business strategies development, or transition into research and development roles or roles focused on renewable energy policy development, advocacy, and regulation. Launching a renewable energy startup or consultancy firm to develop innovative solutions or services in the renewable energy sector is also an option. Staying informed about industry advancements, networking, and continuous learning are key factors in career progression within the renewable energy sector.

Employment Trends

The fair transition towards a green economy will mean the creation of 24 million jobs worldwide by 2030, according to the report “World Employment and Social Outlook: Greening with jobs” from the International Labor Organization (ILO). The shift towards greener and more sustainable economies is also a game changer in EU labour markets. With the aim to overcome climate change and environmental challenges, the European Green Deal will transform the EU into a modern, resource-efficient and competitive economy. The European Commission has adopted a set of proposals to make the EU's climate, energy, transport and taxation policies fit for reducing net greenhouse gas emissions by at least 55% by 2030. The EGD goals will impact employment across sectors and will demand not only frontline green professionals who implement green technology at scale, but also experts with green technological expertise, professionals who manage the green transition (management and HR), professionals who engage citizens to be part of the green transition and trainers. Cedefop data estimate that an additional 2.5 million jobs (more than +1%) will be created by the year 2030 thanks to the implementation of the

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EGD, not only in sectors driving the green transition, but also in administrative and support, legal, accounting and consulting services, computer programming and information services.

Resources (by country)

General	European Environment Agency www.eea.europa.eu/en EUROSTAT Renewable energy statistics IRENA International Renewable Energy Agency www.irena.org IEA www.iea.org European Commission https://commission.europa.eu/news/focus-employment-eus-renewable-energy-sector-2022-05-16_en International Renewable Energy Agency https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_895772.pdf
Greece	Alternative Energy & Power 2023 - Greece https://practiceguides.chambers.com/practice-guides/alternative-energy-power-2023/greece Greek Islands and Renewable Energy: A Green Future https://greekreporter.com/2023/02/13/greek-islands-investments-renewable-energy/ Greece 2023 - Energy Policy Review https://www.iea.org/reports/greece-2023
Italy	Energia Clima 2030 https://energiaclima2030.mise.gov.it/ Sistema Nazionale per la Protezione dell'Ambiente www.snpambiente.it Enel Green Power www.enelgreenpower.com/it Energia ambiente e innovazione www.eai.enea.it Rinnovabili.it www.rinnovabili.it
Cyprus	Cyprus Energy Agency https://www.trade.gov/energy-resource-guide-republic-cyprus-renewable-energy Cyprus Institude https://www.trade.gov/country-commercial-guides/cyprus-renewable-energy-sources-res
Spain	The Association of Renewable Energies Companies (APPA): https://www.appa.es/

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	CENER (NATIONAL CENTER FOR RENEWABLE ENERGIES): https://aeeolica.org/project/cener-centro-nacional-de-energias-renovables/
Portugal	Especialista em Energias Renováveis: Tudo sobre a profissão! (guiadasprofissoes.info) ENERGIAS RENOVÁVEIS E AMBIENTE (iseclisboa.pt)
Belgium	

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Waiter/Waitress

Related professions

Sommelier, Bartender, Barista.

Working conditions

Waiters/waitresses are responsible for providing excellent customer service and ensuring the smooth operation of restaurants, cafes, hotels, bars and other dining establishments. Their primary role is to ensure customer satisfaction by taking orders, serving food and drinks, and addressing any customer needs or concerns. The work environment can be noisy and fast-paced, particularly during peak dining times. They often work irregular hours, including evenings, weekends, and holidays. Shifts can be long, especially during busy periods. Many establishments have specific dress codes or uniforms for their waitstaff. Overall, working as a waiter/waitress can be demanding but rewarding, offering opportunities for customer interaction, teamwork, and skill development within the hospitality industry.

Responsibilities, knowledge, Competences and skills, expected results

Core activities and tasks

Waiters/waitresses' responsibilities aimed include warmly greeting and seating customers, taking accurate food and drink orders, and efficiently delivering them to tables. They also maintain cleanliness in the dining area, handle payments, and address any customer concerns or complaints promptly and professionally. They are involved in taking and managing reservations, allocating tables, and coordinating seating arrangements during busy periods. Providing service during special events, such as private parties or banquets, includes setting up tables, serving guests, and cleaning up afterward. Collaboration with kitchen and bar staff is essential to coordinate orders and ensure timely service, while upselling and recommending menu items can enhance the dining experience and increase sales.

Knowledge, competences and skills

Waiters and waitresses need a solid understanding of menu offerings, including ingredients and preparation methods, to accurately answer customer questions and make recommendations. Effective communication skills are crucial for interacting with customers, taking orders, and coordinating with kitchen staff. Strong organizational abilities enable them to manage multiple tasks simultaneously, such as serving tables, handling payments, and maintaining cleanliness. Adaptability is essential in the dynamic restaurant environment, where they must quickly adjust to changing priorities and customer needs. Additionally, patience and professionalism are key when dealing with challenging situations or dissatisfied customers. Teamwork is vital for collaborating with colleagues to ensure smooth service and efficient operations.

Work prospects and opportunities for PWDs

Waiter/waitress roles in the hospitality industry offer diverse opportunities and fulfilling work prospects for PWDs depending on their abilities and preferences. The hospitality industry is gradually becoming more inclusive, and many establishments are making efforts to accommodate diverse talents and focus

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on accessibility and inclusivity, providing PWDs with opportunities to work in environments that consider their needs. Depending on the type of need, accessible workstations, communication support, flexible scheduling, task adjustments and inclusive training can help create a more inclusive environment for PWDs in the waiter role. Many restaurants, hotels, coffee shops and cafés and catering companies offer wheelchair-accessible spaces, menus in Braille, or other accommodations, ensuring that menus are available in alternative formats, such as digital menus or easy-to-read formats, to cater to different needs. With the rise of technology, some establishments have incorporated remote order-taking and customer service roles. PWDs may find opportunities to take orders over the phone or manage online reservations. Also, PWDs can contribute to making menus accessible and providing excellent customer service, or may be involved in coordinating events.

Formal education (by country) [19]

Greece	Typically, no formal education is required to become a waiter/ waitress. However, some employers prefer that workers have an upper secondary school leaving certificate (NQF Level 4 and EQF Level 4). Most waiters/ waitresses develop the necessary skills through on the job practice. Restaurants may provide a short training period or train new employees under experienced waiters/ waitresses. Fine dining restaurants or hotels may conduct classroom training to improve several soft skills such as communication skills and customer service. Although no formal education is required, accomplishing vocational training courses in hospitality or tourism management is a good foundation to succeed in this occupation. Vocational training diploma (post-secondary level – IEK) (NQF Level 5 and EQF Level 5) Tourism & Hospitality Business Technician (Reception Service - Floor Service - Merchandising) Vocational upper secondary school (EPAL) (NQF Level 4 and EQF Level 4) Employee of Tourism Enterprises
Italy	Since there are no specific rules or laws governing the profession, no educational qualifications, registrations or minimum periods of compulsory professional practice are required to work as a Waiter/Waitress. Despite not formally required, and despite many of the skills required for this role can also be developed through on-the-job training and practical experience, formal education in hospitality or a related field can provide a foundation of knowledge to start working as a Waiter, or for career development. Additionally, specific hospitality structures may require or set secondary education as preferred requirement. Here are the secondary school programs available in Italy:

[19] Please note that program availability and codes may be subject to change, so it is advisable to refer to the official websites of the universities for the most up-to-date information.

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	Secondary School Programs (Scuole Secondarie di Secondo Grado, NQF: 4, EQF:4): - Technical Education, Path: Tourism (Istruzione Tecnica, Indirizzo: Turismo) - Professional Education, Path: Food and wine and hotel hospitality; Profile: Room and sales services (Istruzione Professionale, Indirizzo: Enogastronomia e ospitalità alberghiera; Profilo: Servizi di sala e di vendita) Vocational Education and Training (IeFP): - IeFP - 3 years - Catering operator, Path: Room setup and serving of dishes and drinks (IeFP - 3 anni -, Operatore della ristorazione; Indirizzo: Allestimento sala e somministrazione piatti e bevande) - IeFP - 4° year - Bar room services technician (IeFP - 4th year - Tecnico dei servizi di sala bar)
Cyprus	In Cyprus, there are generally no specific educational or formal requirements to become a Waiter or Waitress. This profession is often open to individuals without the need for specific qualifications or degrees. Instead, becoming a waiter or waitress typically involves on-the-job training and gaining experience in the hospitality industry. Candidates interested in working as a waiter or waitress in Cyprus can typically apply for positions directly with restaurants, cafes, or other food service establishments. Employers may provide training to new hires to familiarize them with the restaurant's menu, service standards, and customer interaction. While there are no specific educational prerequisites, individuals in this profession should possess good communication skills, a friendly demeanor, and the ability to provide excellent customer service.
Spain	No specific formal education is required to be a waiter, as most employers in the hospitality industry do not require a particular college degree or formal education to fill this position. Food Handler Course https://www.educaweb.com/nf/cursos-formacion-de/manipulador-alimentos/ Degree in Food Innovation and Safety https://www.educaweb.com/estudio/titulacion-grado-innovacion-seguridad-alimentaria/
Portugal	To become a counter employee in Portugal, an extensive academic background is not normally necessary. Practical experience, interpersonal skills and industry knowledge play key roles.

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	However, having at least completed basic education can be advantageous (NQF level 2 and EQF level 2). Some educational institutions or training centers offer technical or professional courses in areas related to customer service, restaurant management, or hotel services (NQF level 3 or 4 and EQF level 3 or 4). Although this is not mandatory, it can be useful to acquire specific skills and increase employability. These courses can be offered by hospitality schools, vocational training institutes and employment centres. Hospitality Schools: programs in hospitality and catering. Escola de Hotelaria e Turismo do Porto - https://escolas.turismodeportugal.pt/escola/porto/ Escola de Hotelaria e Turismo de Lisboa - https://escolas.turismodeportugal.pt/escola/lisboa/
Belgium	Different paths can lead to a certain profession. This is an overview of the basic training(s) for each study level. There are often other possibilities. For a number of professions, specific training may be required by law. 3rd Grade SO Hotel - *TSO* Restaurant and kitchen - *BSO* Restaurant and cuisine dual - *DBSO* Restaurant and kitchen dual - *BSO* 7th Specialization Year of BSO Restaurant company and beverage knowledge DBSO and DBSO Restaurant and kitchen dual Apprenticeship Auxiliary waiters Waiters Staff snack bar and tavern Restaurant and kitchen dual BuSO Hotel - *BuSO Form 4* Restaurant and kitchen - *BuSO Training Form 4* Restaurant and kitchen dual - *BuSO Training Form 4* Syntra training courses Restaurant owner Secondary adult education Waiter Waiter banquet service Waiter brasserie, tavern and bistro Employee brasserie, tavern and bistro

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	Responsible brasserie, tavern and bistro Manager waiters VDAB courses: Kelner

Career Progression

Starting as an entry-level waiter, and after gaining experience and demonstrating exceptional skills, a waiter can progress to a senior waiter or head waiter position, supervising other staff, coordinating table assignments, and ensuring smooth service operations. More advanced positions may include restaurant supervisor or assistant manager or restaurant manager roles.

Employment Trends

The hospitality sector, including restaurants and cafes, faced challenges due to the COVID-19 pandemic. Lockdowns, restrictions, and changes in consumer behavior significantly impacted the industry. Waiters and bartenders in European countries experienced a decrease of over 15% in the pandemic year. The recovery trajectory may vary across countries and regions. In Europe, both the hotel and restaurant industries continue to face significant staff shortages in 2023. The challenges are multifaceted and differ slightly between the sectors and regions. The sector faces challenges in attracting and retaining staff, especially in the face of declining interest in vocational diplomas for the hospitality industry. In general, there are promising job prospects for waiter/waitress roles in the hospitality industry. As Europe is a popular tourist destination with millions of visitors each year, the outlook of the profession is positive due to the continuous growth of the tourism industry, creating a demand for hospitality services. Waiter/waitress can be employed in major cities, tourist hotspots, coastal resorts, mountain retreats, and rural areas across Europe. The diversity of locations ensures a wide range of job prospects for individuals seeking employment in the hospitality sector, both in seasonal and year-round positions. Overall, travel and tourism generated, directly and indirectly, around 34.76 million jobs in the region in 2022.As the adoption of technology in the hospitality industry, including online reservations, digital menus, and contactless payment systems, continues to grow, waitstaff may need to adapt to these technological changes.

Resources (by country)

General	HOTREC Confederation of National Associations of Hotels, Restaurants, Cafés and Similar Establishments in the European Union and European Economic Area https://www.hotrec.eu/ Intereconomics https://www.intereconomics.eu/contents/year/2022/number/2/article/occupations-in-the-european-labour-market-during-the-covid-19-pandemic.html Viqal https://www.viqal.com/blog/europes-hospitality-staffing-challenge

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	Cedefop https://www.cedefop.europa.eu/en/tools/skills-intelligence/occupations?occupation=5.51#1
Greece	Greek Hospitality Ecosystem Forum https://horecaexpo.gr/en/event/greek-hospitality-ecosystem-forum/ Glassdoor https://www.glassdoor.ie/Job/greece-waitress-jobs-SRCH_IL.0,6_IN100_KO7,15.htm Food and Beverage Management Association of Greece https://be.linkedin.com/company/food-and-beverage-management-association-of-greece
Italy	Rapporto Annuale Ristorazione, Confcommercio Orizzonte, Rivista di Orientamento al Food Service www.rivistaorizzonte.com/
Cyprus	Tourim and hospitality Cyprus https://www.investcyprus.org.cy/tourism-and-hospitality/
Spain	11 digital tools for today's hospitality industry: https://www.hostelco.com/11-herramientas-digitales-para-la-hosteleria-de-hoy/ OPERATING GUIDE TO :: Being the perfect waiter/waitress: https://www.amazon.ae/GU%C3%8DA-OPERATIVA-m%C3%A1s-agenda-GASTRON%C3%93MICA/dp/B08FP2BV9V Association of Waiters and Waitresses in Spain: http://www.amyce.com/
Portugal	Empregado de Mesa: saiba tudo sobre esta profissão (guiadasprofissoes.info)
Belgium	CEDEFOP Belgium Guidance System in Belgium (Flanders) https://www.onderwijskiezer.be/v2/beroepen/beroep_detail.php?beroep=247 https://competent.vdab.be/competent/release/current/occupationalprofile/OP-728

Web designer

Related professions

Software developer, Web content manager, Multimedia designer.

Working Conditions

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WEB DESIGNERs create visually appealing and user-friendly websites. They are responsible for crafting the overall look, layout, and functionality of websites, ensuring they meet both aesthetic and functional requirements. They collaborate closely with clients or teams to understand project goals and user needs, using their creativity and technical skills to design responsive and accessible websites.

Activities, knowledge, competences and skills, expected results

Core activities and tasks

Web designers deal with conceptualizing, designing, and implementing visually appealing and user-friendly websites. Core tasks involve collaborating with clients to understand their requirements, creating design concepts and mockups, and translating these into functional web pages using HTML, CSS, and JavaScript. Web designers prioritize user experience by ensuring intuitive navigation, responsive design for various devices, and adherence to best practices in accessibility and usability. Throughout the process, effective communication and collaboration with team members and clients are essential, as is continuous learning to stay updated on industry trends and technologies. Testing and quality assurance are integral to the role, ensuring that the final product meets both client expectations and user needs.

Knowledge, competences and skills

Web designers should possess a strong understanding of design principles, as well as proficiency in design software such as Adobe Photoshop, Illustrator, or Sketch. Proficiency in HTML, CSS, and JavaScript is essential for translating design concepts into functional web pages, while knowledge of responsive design techniques ensures compatibility across various devices and screen sizes. Additionally, web designers should have expertise in user experience (UX) design, including usability testing, wireframing, and prototyping tools, to create intuitive and engaging user interfaces. Effective communication and collaboration skills are crucial for working with clients, developers, and other team members to bring projects to fruition, while creativity and attention to detail are necessary for producing visually appealing and user-friendly designs. Continuous learning and staying updated on emerging trends and technologies in web design are also essential to remain competitive in the field.

Work prospects and opportunities for PWDs

A career in web design is well-suited to accommodate diverse talents and abilities, offering numerous prospects for PWDs working on a range of projects, from small business websites to large-scale corporate sites, and potentially freelancing or working for design agencies. PWDs can contribute valuable insights to create user-friendly interfaces, considering diverse user needs. PWDs may focus their expertise in accessibility, contributing to making the web more inclusive for all users. Potential career roles for PWDs in web design may include: User Experience (UX) Designer, User Interface (UI) Designer, Front-End Developer, Accessibility Consultant, Graphic Designer, Content Manager etc. Flexibility in work arrangements can be particularly beneficial for individuals with specific needs or preferences. Technology and design tools continue to evolve, providing opportunities for inclusive work environments. A web designer with a disability can benefit from advanced assistive technologies such as screen readers, voice recognition software, and adaptive keyboards to perform tasks effectively. PWDs can explore web design roles that offer remote work options or involve design software with accessibility

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features, usability testing etc. A career in web design offers diverse opportunities for PWDs to showcase their creativity, technical skills, and contribute to the dynamic digital landscape.

Formal education (by country) [20]

Greece	A formal education in computer science or a related field is typically required to become a web designer. While some positions may accept candidates with a certificate from upper secondary education (NQF Level 4 and EQF Level 4) combined with a vocational training course in the field, most employers prefer candidates with at least a vocational upper secondary school (EPAL) (NQF Level 4 and EQF Level 4) or vocational training diploma (post-secondary level – IEK) (NQF Level 5 and EQF Level 5). Qualifications at a Bachelor's (NQF Level and EQF Level 6)or Master's level (NQF Level 7 and EQF Level 7) are strongly desired. Here are some educational requirements and degree options for aspiring software developers: Vocational upper secondary school (EPAL) Information Technology Applications Technician Vocational training institutes (IEK) Computer technician (Multimedia / Web Designer - Developer / Video Games). Bachelor's degree in Applied Computer Science. Fields of study: a) Applied Computer Science, b) Technology Management. Department of Applied Computer Science. School of Information Sciences. University of Macedonia. Bachelor's degree in Computer Engineering (T.E.). Department of Computer Engineering (T.E.). School of Technological Applications. Alexandrio Technological Educational Institute of Thessaloniki. Bachelor's degree in Informatics. Department of Informatics. School of Sciences. University of Western Macedonia. Bachelor's degree in Computer Engineering Technological Education. Department of Computer Engineering of Technological Education. Technological Educational Institution of Central Greece Bachelor's degree in Digital Systems. Department of Digital Systems. School of Information and Communication Technologies. University of Piraeus. Bachelor's degree in Informatics Department of Informatics, University of Piraeus Bachelor's degree in Computer Engineering Technology, with Advanced Semester Directions: Network Engineering, Computer Engineering, Software Engineering. Department of Information Technology Engineering. School of Technological Applications. Technological Educational Institute of Crete. Bachelor's degree in Computer Engineering. Department of Computer and Information Engineering. School of Engineering. University of West Attica. Bachelor's degree in Computer Engineering and Informatics Department of Computer Engineering and Informatics. Faculty of Engineering University of Ioannina MSc in Applied Informatics, University of Macedonia MSc in Informatics and Applications, University of West Attica

[20] Please note that program availability and codes may be subject to change, so it is advisable to refer to the official websites of the universities for the most up-to-date information.

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	MSc in Advanced Informatics and Computing Systems - Software Development and Artificial Intelligence, University of Piraeus MSc in Information Systems, International Hellenic University
Italy	As for other profiles who work for the web, there is no standard training course for Web Designers. To work as a Web Designer in Italy, a combination of formal education, technical skills, and a strong portfolio is typically essential. After obtaining the high school diploma (NQF:4, EQF:4), individuals can pursue vocational training programs, technical courses, or professional courses in web design, graphic design, or related fields that provide hands-on training in design tools and techniques. While it's not mandatory to have a university degree, obtaining a bachelor's or master's degree in relevant fields can enhance knowledge and marketability. Below are the recommended educational steps and potential university programs: University Bachelor's Programs (Laurea Triennale, NQF:6, EQF:6): - Graphic Design (Design Grafico), class L-4 - Communication Design (Design della Comunicazione), class L-4 - Digital Humanities (Scienze della comunicazione), class L-20 - Computer Science (Informatica), class 31 - University Master's Programs (Laurea Specialistica, NQF:7, EQF:7): - Communication Design (Design della Comunicazione), class LM-12 - Graphic Design (Design Grafico), class LM-12 Before choosing a program, it's advisable to check the specific details and curriculum of the programs offered by individual universities. A useful website to do it is Universitaly. In addition to formal education, obtaining certifications in relevant design tools such as Adobe Creative Suite, Sketch, or Figma can be beneficial. Building a strong portfolio of web design projects is crucial for showcasing skills to potential employers. Actively seeking internships, freelance opportunities, or part-time positions that provide practical experience in web design is also important. Web design is a dynamic field, and staying updated with the latest design trends, user experience principles, and emerging technologies is essential.
Cyprus	In Cyprus, to pursue a career as a Web Designer, it is often expected that you have a qualification that aligns with EQF Level 6 or a similar level of education. This level of qualification typically signifies a higher education degree or equivalent, which is often necessary for roles that demand a deep understanding of web design principles, programming languages, and user experience (UX) design. Recommended educational paths include: University of Nicosia: https://register.unic.ac.cy/study-graphic-digital-design-ba/?utm_source=Google&utm_medium=Search&utm_campaign=BA-Graphic-Digital-Design-Greece-Cyprus&utm_term=digital%20design%20university&gad_source=1&gclid=CjwKCAiAx_GqBhBQEiwAlDNAZjri491TTs5xRYEikIruja9iqqTsClzxyubq0Yur0URpvPeGNxdguRoCMqoQAvD_BwE UCLAN: https://www.uclancyprus.ac.cy/undergraduate-course/bsc-hons-web-design-development/
Spain	Although not an absolute requirement, many web designers have at least a bachelor's degree or technical education related to computer science, graphic design, programming, interaction design, or similar fields. Degree in Computer Engineering https://www.educaweb.com/estudio/titulacion-grado-ingenieria-informatica/ Bachelor's Degree in Computer Engineering in Information Technologies https://www.educaweb.com/estudio/titulacion-grado-ingenieria-informatica-tecnologias-informacion/ Degree in Software Engineering

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	https://www.educaweb.com/estudio/titulacion-grado-ingenieria-software/
Portugal	No specific educational qualifications, certifications, registrations, or required periods of professional practice are needed for this profession. Secondary Education: After basic education, enter secondary school (10th to 12th grade) and choose a course that provides a foundation in visual arts, graphic design or information technology. These courses may include Science and Technology or Visual Arts. These qualifications align with NQF Level 5 and EQF Level 5. Graphic Design courses: After secondary school, it is recommended to look for courses in graphic design or communication design. There are several institutions in Portugal that offer courses in this area, such as universities, art schools and design schools. Web Development Courses: In addition to graphic design, it is important to acquire knowledge in web development. There are specific courses and workshops in web development that address HTML, CSS, JavaScript and other relevant languages and technologies. **Relevant Courses** Degree in Design · Faculty of Fine Arts - University of Lisbon - Faculty of Fine Arts | ULisboa · ESAD – Matosinhos - ESAD Degree in Communication Design · Faculty of Fine Arts - University of Porto - Faculty of Fine Arts - University of Porto (up.pt) · ESAD - ESAD Degree in Multimedia · University of Porto - Universidade do Porto (up.pt) · University of Aveiro - Página Inicial - Universidade de Aveiro (ua.pt) Degree in Digital Game Design and Animation · Universidade Lusófona de Humanidades e Tecnologias - Universidade Lusófona (ulusofona.pt) · University of Algarve - Estudar onde é bom viver | Universidade do Algarve (ualg.pt) Degree in Design and Technologies for the Web · University of Aveiro - Faculdade de Comunicação e Arte - Página Inicial - Universidade de Aveiro (ua.pt) · Universidade Lusófona de Humanidades e Tecnologias - - Universidade Lusófona (ulusofona.pt) · School of Technology and Management of the Polytechnic Institute of Leiria - Technology and Management | Politécnico de Leiria (ipleiria.pt) Lisbon School of Social Communication - Home | Escola Superior de Comunicação Social (ipl.pt)
Belgium	Different paths can lead to a certain profession. This is an overview of the basic training(s) for this profession for each study level. There are often other possibilities. For a number of professions, specific training may be required by law. 3rd Grade SO Accounting - Informatics - *TSO* Computer management - *TSO* Multimedia - *TSO* BuSO Accounting - computer science - *BuSO Training Form 4* Informatics management - *BuSO Form Training 4* Multimedia - *BuSO Form Training 4* HO - Graduate Programming System and network management HO - Bachelor's

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	Information Management and Multimedia *(Professional Bachelor - HO)* Information Management & Multimedia (E) *(Professional Bachelor - HO)* Applied Informatics : Application Development *(Professional Bachelor - HO)* Applied Informatics : Software Management *(Professional Bachelor - HO)* Applied Informatics : Systems and Network Management *(Professional Bachelor - HO)* Applied Informatics : without specific specialisations *(Professional Bachelor - HO)* Visual design *(Professional bachelor - HO)* Syntra training courses Drupal developer Web designer Webmaster Web developer Secondary adult education Web content Web designer Web developer Web server manager VDAB courses: Websitebeheerder

Career Progression

Web Designers starting from entry-level positions can advance by gaining expertise in specific areas, like e-commerce or mobile app design. They can progress from junior roles to senior or lead positions, overseeing design teams and project management. They may also choose to specialize in user experience (UX) or user interface (UI) design, and can also work as freelancers or external consultants within a company and/or collaborating with other IT professionals (software developer, multimedia designer).

Employment trends

ICT professionals are among the top three occupations, regarding future employment growth in EU27 over the period 2022-2035. According to Cedefop (2023), the employment of ICT professionals is projected to increase by 30 per cent between 2022 and 2035. Also, the ambitions set for the area of skills in the Digital Compass are that, by 2030, at least 80% of all adults should have at least basic digital skills, and that there should be 20 million employed ICT specialists in the EU, with increased women's participation. The growth of e-commerce has led to an increased demand for web designers with expertise in creating user-friendly and visually appealing online shopping experiences. This trend is likely to continue as businesses expand their online presence. Additionally, with the increasing use of mobile devices, web designers with skills in responsive design and a focus on providing excellent user experiences are in high demand. The field of web design evolves rapidly, with new technologies and design trends emerging regularly.

Resources (by country)

General	Smashing Magazine www.smashingmagazine.com Speckyboy Design Magazine speckyboy.com Noupe Magazine www.noupe.com

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	Web Designers News webdesignernews.com Cedefop. https://www.cedefop.europa.eu/en/tools/skills-intelligence/future-employment-growth?country=EU27&year=2022-2035#3 Eurostat https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220805-2#:~:text=The%20ambitions%20set%20for%20the%20area%20of%20skills,specialists%20in%20the%20EU%2C%20with%20increased%20women%E2%80%99s%20participation.
Greece	Best Web Design Agencies in Greece https://www.sortlist.com/web-design/greece-gr Top Web Design Companies in Greece https://www.designrush.com/agency/website-design-development/gr WebDesignBlog https://www.webdesignblog.gr/
Italy	Le migliori Web agency Italiane
Cyprus	Cyprus Web designers: https://www.cypruswebdesigners.com/
Spain	26 free resources for web design that will make your life easier: https://graffica.info/recursos-gratuitos-diseno-web/ Spanish Network of Design Associations: https://designread.es/ Graphic Design and Visual Communication Association: https://www.adg-fad.org/es
Portugal	Web Designer: Tudo sobre a profissão | Guia das Profissões (guiadasprofissoes.info) Web Designer - O que é, O que faz, Qual o Salário? (portalwebdesigner.com)
Belgium	CEDEFOP Belgium Guidance System in Belgium (Flanders) https://www.onderwijskiezer.be/v2/beroepen/beroep_detail.php?beroep=1689 https://competent.vdab.be/competent/release/current/occupationalprofile/OP-229

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