

| #  | ISCO-code                 | Occupational Profile  | DTM |
|----|---------------------------|---|-----|
| 1  | <a href="#">'1120'!A1</a> | Managing directors and chief executives                           | x   |
| 2  | <a href="#">'1212'!A1</a> | Human resource managers   | x   |
| 3  | <a href="#">'1221'!A1</a> | Sales and marketing managers                                      | x   |
| 4  | <a href="#">'1223'!A1</a> | Research and development managers                                 | x   |
| 5  | <a href="#">'1321'!A1</a> | Manufacturing managers  | x   |
| 6  | <a href="#">'1324'!A1</a> | Supply, distribution and related managers                         | x   |
| 7  | <a href="#">'1330'!A1</a> | Information and communications technology service managers        | x   |
| 8  | <a href="#">'2141'!A1</a> | Industrial and production engineers                               | x   |
| 9  | <a href="#">'2163'!A1</a> | Product and garment designers                                     | x   |
| 10 | <a href="#">'2523'!A1</a> | Computer network professionals                                    | x   |
| 11 | <a href="#">'3113'!A1</a> | Electrical engineering technicians                                | x   |
| 12 | <a href="#">'3114'!A1</a> | Electronics engineering technicians                               | x   |
| 13 | <a href="#">'3115'!A1</a> | Mechanical engineering technicians                                | x   |
| 14 | <a href="#">'3122'!A1</a> | Manufacturing supervisors   | x   |
| 15 | <a href="#">3139.2</a>    | Industrial robot controllers                                      | x   |
| 16 | <a href="#">'3511'!A1</a> | Information and communications technology operations technician   | x   |
| 17 | <a href="#">'3512'!A1</a> | Information and communications technology user support technician | x   |
| 18 | <a href="#">'4132'!A1</a> | Data entry clerks   | x   |
| 19 | <a href="#">'4322'!A1</a> | Production clerks   | x   |
| 20 | <a href="#">'7115'!A1</a> | Carpenters and joiners  | x   |
| 21 | <a href="#">'7317'!A1</a> | Handicraft workers in wood, basketry and related materials        | x   |
| 22 | <a href="#">'7521'!A1</a> | Wood treaters   | x   |
| 23 | <a href="#">'7522'!A1</a> | Cabinet-makers and related workers                                | x   |
| 24 | <a href="#">'7523'!A1</a> | Woodworking-machine tool setters and operators                    | x   |
| 25 | <a href="#">'7534'!A1</a> | Upholsterers and related workers                                  | x   |
| 26 | <a href="#">'8172'!A1</a> | Wood processing plant operators                                   | x   |
| 27 | <a href="#">'8219'!A1</a> | Furniture assemblers  | x   |
| 28 | <a href="#">'9329'!A1</a> | Factory hands   | x   |

| 1120<br><a href="#">back</a>  | Digitalization high %<br>(yes / no) | Recommended<br>Learning Units |
|---|-------------------------------------|-------------------------------|
|   |                                     | ALL except 1, 2 and 3         |
| <b>Managing directors and chief executives</b> formulate and review the policies, and plan, direct, coordinate and evaluate the overall activities, of enterprises or organizations (except special-interest organizations and government departments) with the support of other managers, usually within guidelines established by a board of directors or a governing body to whom they are answerable for the operations undertaken and results. |                                     |                               |
| Tasks include -   |                                     |                               |
| (a) planning, directing and coordinating the general functioning of an enterprise or organization;  | yes                                 | 6 + 7 + 8 +10                 |
| (b) reviewing the operations and results of the enterprise or organization and reporting to boards of directors and governing bodies;   | yes                                 | 4 + 6 + 7 + 8                 |
| (c) determining objectives, strategies, policies and programmes for the enterprise or organization;   | yes                                 | 5 + 6                         |
| (d) providing overall leadership and management to the enterprise or organization;  | no                                  | 6 + 7 + 8 + 10                |
| (e) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources;   | yes                                 | 4 + 5 + 6                     |
| (f) authorizing material, human and financial resources to implement organizational policies and programmes;  | yes                                 | 4 + 6 + 7                     |
| (g) monitoring and evaluating performance of the organization or enterprise against established objectives and policies;  | yes                                 | 6 + 7 + 9                     |
| (h) consulting with senior subordinate staff and reviewing recommendations and reports;   | yes                                 | 7 + 8                         |
| (i) representing the organization at official occasions and board meetings, in negotiations and at conventions, seminars, public hearings and forums;   | no                                  | 10                            |
| (j) selecting or approving the selection of senior staff;   | yes                                 | 8                             |
| (k) ensuring the organization complies with relevant legislation and regulations.   | yes                                 | 9                             |

| 1212  | Digitalization high % | Recommended          |
|---|-----------------------|----------------------|
| <a href="#">back</a>  | (yes / no)            | Learning Units       |
|   |                       | 4, 6, 7, 8, 9 and 10 |
| <b>Human resource managers</b> plan, direct and coordinate policies concerning the personnel, industrial relations and occupational health and safety activities of an enterprise or organization, or of enterprises that provide human resource services to other enterprises and organizations. |                       |                      |
| Tasks include -   |                       |                      |
| (a) planning, directing and coordinating the personnel and industrial relations activities, policies and practices of an enterprise or organization;  | yes                   | 7 + 8                |
| (b) planning and organizing procedures for recruitment, training, promotion, transfer and dismissal of staff;   | yes                   | 8                    |
| (c) planning and organizing negotiations and procedures for determination of wage structures and level and for consultation with workers on conditions of employment;   | yes                   | 4 + 8                |
| (d) overseeing safety, health and related programmes and activities;  | yes                   | 9                    |
| (e) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources;   | yes                   | 4 + 8                |
| (f) establishing and directing operational and administrative procedures;   | yes                   | 9                    |
| (g) overseeing the development and implementation of management information systems;  | yes                   | 6                    |
| (h) ensuring compliance with standards and legislation relating to employees' rights, health and safety, equal opportunity and related concerns;  | yes                   | 9                    |
| (i) overseeing the selection, training and performance of staff for the entire enterprise or organization;  | yes                   | 8                    |
| (j) consulting with senior management and with managers of other departments;   | no                    | 7                    |
| (k) representing the enterprise or organization in dealings with outside bodies.  | no                    | 10                   |

| 1221<br><a href="#">back</a>   | Digitalization high %<br>(yes / no) | Recommended<br>Learning Units |
|--|-------------------------------------|-------------------------------|
|  |                                     | 4, 6, 7, 8, 9 and 10          |
| <b>Sales and marketing managers</b> plan, direct and coordinate the sales and marketing activities of an enterprise or organization, or of enterprises that provide sales and marketing services to other enterprises and organizations. |                                     |                               |
| Tasks include -  |                                     |                               |
| (a) planning and organizing special sales and marketing programmes based on sales records and market assessments;  | yes                                 | 7                             |
| (b) determining price lists, discount and delivery terms, sales promotion budgets, sales methods, special incentives and campaigns;  | yes                                 | 4                             |
| (c) establishing and directing operational and administrative procedures related to sales and marketing activities;  | yes                                 | 6 + 9                         |
| (d) leading and managing the activities of sales and marketing staff;  | no                                  | 6 + 7                         |
| (e) planning and directing daily operations;   | yes                                 | 6                             |
| (f) establishing and managing budgets and controlling expenditure to ensure the efficient use of resources;  | yes                                 | 4 + 7                         |
| (g) overseeing the selection, training and performance of staff;   | yes                                 | 8                             |
| (h) representing the enterprise or organization at sales and marketing conventions, trade exhibitions and other forums.  | no                                  | 10                            |

| 1223   | Digitalization high % | Recommended           |
|--|-----------------------|-----------------------|
| <a href="#">back</a>   | (yes / no)            | Learning Units        |
|  |                       | <b>ALL</b>            |
| <b>Research and development managers</b> plan, direct and coordinate the research and development activities of an enterprise or organization or of enterprises that provide related services to other enterprises and organizations.          |                       |                       |
| Tasks include -  |                       |                       |
| (a) planning, directing and coordinating research and development activities, in-house or commissioned from external research organizations, to develop new or improved technical processes, products, knowledge, or utilization of materials; | yes                   | 1 + 2 + 3 + 4 + 5 + 6 |
| (b) planning the overall research and development programme of an enterprise or organization, specifying goals and budgetary requirements;   | yes                   | 5 + 6                 |
| (c) leading and managing the activities of research and development staff;   | no                    | 7 + 8                 |
| (d) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources;  | yes                   | 4 + 6                 |
| (e) establishing and directing operational and administrative procedures;  | yes                   | 9                     |
| (f) planning and directing daily operations;   | yes                   | 6 + 7                 |
| (g) overseeing the selection, training and performance of staff;   | yes                   | 8                     |
| (h) representing the enterprise or organization at conventions, seminars and conferences.  | no                    | 10                    |

| 1321  | Digitalization high % | Recommended           |
|---|-----------------------|-----------------------|
| <a href="#">back</a>  | (yes / no)            | Learning Units        |
|   |                       | <b>ALL</b>            |
| <b>Manufacturing managers</b> plan, direct and coordinate activities concerned with the production of goods, the production and distribution of electricity, gas and water, and the collection, treatment and disposal of waste. They may manage the production departments of large enterprises or be the managers of small manufacturing companies. |                       |                       |
| Tasks include -   |                       |                       |
| (a) determining, implementing and monitoring production strategies, policies and plans;   | yes                   | 1 + 2 + 3 + 4 + 5 + 6 |
| (b) planning details of production activities in terms of output quality and quantity, cost, time available and labour requirements;  | yes                   | 4 + 8 + 9             |
| (c) controlling the operation of production plant and quality procedures through planning of maintenance, designation of operating hours and supply of parts and tools;   | yes                   | 4 + 8 + 9             |
| (d) establishing and managing budgets, monitoring production output and costs, and adjusting processes and resources to minimize costs;   | yes                   | 4 + 6                 |
| (e) consulting with and informing other managers about production matters;  | yes                   | 6 + 7                 |
| (f) overseeing the acquisition and installation of new plant and equipment;   | yes                   | 1 + 2 + 3 + 4 + 6     |
| (g) controlling the preparation of production records and reports;  | yes                   | 4 + 6 + 9             |
| (h) coordinating the implementation of occupational health and safety requirements;   | yes                   | 9                     |
| (i) identifying business opportunities and determining products to be manufactured;   | yes                   | 5 + 6                 |
| (j) researching and implementing regulatory and statutory requirements affecting manufacturing operations and the environment;  | yes                   | 9 + 10                |
| (k) overseeing the provision of quotations for the manufacture of specialized goods and establishing contracts with customers and suppliers;  | yes                   | 4 + 7                 |
| (l) overseeing the selection, training and performance of staff.  | yes                   | 8                     |

| 1324   | Digitalization high % | Recommended       |
|--|-----------------------|-------------------|
| <a href="#">back</a>   | (yes / no)            | Learning Units    |
|  |                       | <b>ALL</b>        |
| <b>Supply, distribution and related managers</b> plan, direct and coordinate passenger transportation systems and facilities and the supply, transportation, storage and distribution of goods, either as the manager of a department or as the general manager of an enterprise or organization that does not have a hierarchy of managers. |                       |                   |
| Tasks include -  |                       |                   |
| (a) determining, implementing and monitoring purchasing, storage and distribution strategies, policies and plans;  | yes                   | 1 + 2 + 4 + 5 + 6 |
| (b) preparing and implementing plans to maintain required stock levels at minimum cost;  | yes                   | 1 + 2 + 4 + 5 + 6 |
| (c) negotiating contracts with suppliers to meet quality, cost and delivery requirements;  | yes                   | 4 + 6 + 7 + 8     |
| (d) monitoring and reviewing storage and inventory systems to meet supply requirements, and control stock levels;  | yes                   | 4                 |
| (e) overseeing the dispatch of road vehicles, trains, vessels or aircraft;   | yes                   | 1 + 2 + 3 + 4     |
| (f) operating recording systems to track all movements of goods, and ensuring reordering and restocking at optimal times;  | yes                   | 1 + 2 + 3 + 4     |
| (g) liaising with other departments and customers concerning requirements for outward goods and associated forwarding transportation;  | yes                   | 7                 |
| (h) overseeing the recording of purchase, storage and distribution transactions;   | yes                   | 1 + 2 + 3 + 4     |
| (i) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources;  | yes                   | 5 + 6             |
| (j) establishing and directing operational and administrative procedures;  | yes                   | 6 + 9             |
| (k) planning and directing daily operations;   | yes                   | 7 + 8             |
| (l) overseeing the selection, training and performance of staff.   | yes                   | 8                 |

| 1330   | Digitalization high % | Recommended           |
|--|-----------------------|-----------------------|
| <a href="#">back</a>   | (yes / no)            | Learning Units        |
|  |                       | <b>ALL</b>            |
| <b>Information and communications technology services managers</b> plan, direct and coordinate the acquisition, development, maintenance and use of computer and telecommunication systems, either as the manager of a department or as the general manager of an enterprise or organization that does not have a hierarchy of managers. |                       |                       |
| Tasks include -  |                       |                       |
| (a) consulting with users, management, vendors and technicians to assess computing needs and system requirements, and specifying technology to meet those needs;   | yes                   | 1 + 2 + 3 + 4 + 5 + 7 |
| (b) formulating and directing information and communication technology (ICT) strategies, policies and plans;   | yes                   | 5 + 6 + 7             |
| (c) directing the selection and installation of ICT resources and the provision of user training;  | yes                   | 7 + 8                 |
| (d) directing ICT operations, analysing workflow, establishing priorities, developing standards and setting deadlines;   | yes                   | 6 + 9                 |
| (e) overseeing the security of ICT systems;  | yes                   | 9                     |
| (f) assigning, reviewing, managing and leading the work of systems analysts, programmers and other computer-related workers;   | yes                   | 6 + 7 + 8             |
| (g) evaluating the organization's technology use and needs and recommending improvements such as hardware and software upgrades;   | yes                   | 1 + 2 + 3 + 4 + 5 + 6 |
| (h) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources;  | yes                   | 5 + 6 + 7 + 9         |
| (i) establishing and directing operational and administrative procedures;  | yes                   | 7 + 8 + 9             |
| (j) overseeing the selection, training and performance of staff;   | yes                   | 8                     |
| (k) representing the enterprise or organization at ICT-related conventions, seminars and conferences.  | no                    | 10                    |

| 2141  | Digitalization high % | Recommended               |
|---|-----------------------|---------------------------|
| <a href="#">back</a>  | (yes / no)            | Learning Units            |
|   |                       | <b>ALL</b>                |
| <b>Industrial and production engineers</b> conduct research and design, organize and oversee the construction, operation and maintenance of industrial production processes and installations. They establish programmes for the coordination of manufacturing activities and assess cost effectiveness and safety. |                       |                           |
| Tasks include -   |                       |                           |
| (a) studying functional statements, organizational charts and project information to determine functions and responsibilities of workers and work units and to identify areas of duplication;   | yes                   | 1 + 2 + 3 + 4 + 5 + 6 + 9 |
| (b) establishing work measurement programmes and analysing work samples to develop standards for labour utilization;  | yes                   | 1 + 2 + 3 + 4 + 9         |
| (c) analysing workforce utilization, facility layout, operational data and production schedules and costs to determine optimum worker and equipment efficiencies;   | yes                   | 1 + 2 + 3 + 4 + 5 + 6 + 9 |
| (d) developing specifications for manufacture, and determining materials, equipment, piping, material flows, capacities and layout of plant and systems;  | yes                   | 4 + 5 + 6 + 8 + 9         |
| (e) organizing and managing project labour and the delivery of materials, plant and equipment;  | yes                   | 6 + 7 + 8 + 9             |
| (f) establishing standards and policies for installation, modification, quality control, testing, inspection and maintenance according to engineering principles and safety regulations;  | yes                   | 9                         |
| (g) inspecting plant to improve and maintain performance;   | yes                   | 1 + 2 + 3 + 4 + 7 + 9     |
| (h) directing the maintenance of plant buildings and equipment, and coordinating the requirements for new designs, surveys and maintenance schedules;   | yes                   | 1 + 2 + 3 + 4 + 7 + 9     |
| (i) advising management on new production methods, techniques and equipment;  | yes                   | 5 + 6 + 7 + 10            |
| (j) liaising with materials buying, storing and controlling departments to ensure a steady flow of supplies.  | yes                   | 5 + 6 + 7 + 8 + 9         |

| 2163  | Digitalization high % | Recommended                |
|---|-----------------------|----------------------------|
| <a href="#">back</a>  | (yes / no)            | Learning Units             |
|   |                       | <b>ALL</b>                 |
| <b>Product and garment designers</b> design and develop products for manufacture and prepare designs and specifications of products for mass, batch and one-off production. |                       |                            |
| Tasks include -   |                       |                            |
| (a) determining the objectives and constraints of the design brief by consulting with clients and stakeholders;   | yes                   | 1 + 2 + 3 + 4 + 5 + 7 + 10 |
| (b) formulating design concepts for clothing, textiles, industrial, commercial and consumer products, and jewellery;  | yes                   | 1 + 2 + 3 + 4 + 5 + 7 + 10 |
| (c) harmonizing aesthetic considerations with technical, functional, ecological and production requirements;  | no                    | 1 + 2 + 3 + 4 + 5          |
| (d) preparing sketches, diagrams, illustrations, plans, samples and models to communicate design concepts;  | yes                   | 1 + 2 + 3 + 5 + 7          |
| (e) negotiating design solutions with clients, management, and sales and manufacturing staff;   | yes                   | 5 + 6 + 7 + 10             |
| (f) selecting, specifying and recommending functional and aesthetic materials, production methods and finishes for manufacture;   | yes                   | 1 + 2 + 3 + 4 + 10         |
| (g) detailing and documenting the selected design for production;   | yes                   | 1 + 2 + 3 + 4 + 9          |
| (h) preparing and commissioning prototypes and samples;   | yes                   | 2 + 3                      |
| (i) supervising the preparation of patterns, programmes and tooling, and of the manufacturing process.  | yes                   | 1 + 2 + 3 + 7 + 8 + 9      |

| 2523   | Digitalization high % | Recommended            |
|--|-----------------------|------------------------|
| <a href="#">back</a>   | (yes / no)            | Learning Units         |
|  |                       | <b>ALL</b>             |
| <b>Computer network professionals</b> research, analyse, design, test and recommend strategies for network architecture and development. They implement, manage, maintain and configure network hardware and software, and monitor, troubleshoot and optimize performance. |                       |                        |
| Tasks include -  |                       |                        |
| (a) analysing, developing, interpreting and evaluating complex system design and architecture specifications, data models and diagrams in the development, configuration and integration of computer systems;  | yes                   | 1 + 2 + 3 + 4 + 5 + 10 |
| (b) researching, analysing, evaluating and monitoring network infrastructure to ensure that networks are configured to operate at optimal performance;   | yes                   | 1 + 2 + 3 + 4          |
| (c) assessing and recommending improvements to network operations and integrated hardware, software, communications and operating systems;   | yes                   | 5 + 6 + 7 + 10         |
| (d) providing specialist skills in supporting and troubleshooting network problems and emergencies;  | yes                   | 5 + 6 + 7 + 8          |
| (e) installing, configuring, testing, maintaining and administering new and upgraded networks, software database applications, servers and workstations;   | yes                   | 8 + 9                  |
| (f) preparing and maintaining procedures and documentation for network inventory, and recording diagnosis and resolution of network faults, enhancements and modifications to networks and maintenance instructions;   | yes                   | 4 + 9                  |
| (g) monitoring network traffic and activity, capacity and usage to ensure continued integrity and optimal network performance.   | yes                   | 4                      |

| 3113  | Digitalization high % | Recommended                |
|---|-----------------------|----------------------------|
| <a href="#">back</a>  | (yes / no)            | Learning Units             |
|   |                       | ALL except 6, 7 and 8      |
| <b>Electrical engineering technicians</b> perform technical tasks to aid in electrical engineering research and in the design, manufacture, assembly, construction, operation, maintenance and repair of electrical equipment, facilities and distribution systems. |                       |                            |
| Tasks include -   |                       |                            |
| (a) providing technical assistance in research on and development of electrical equipment and facilities, or testing prototypes;  | yes                   | 1 + 2 + 3 + 4 + 5 + 9 + 10 |
| (b) designing and preparing blueprints of electrical installations and circuitry according to the specifications given;   | yes                   | 1 + 2 + 3 + 4 + 9          |
| (c) preparing detailed estimates of quantities and costs of materials and labour required for manufacture and installation, according to the specifications given;  | yes                   | 4 + 5 + 9                  |
| (d) monitoring technical aspects of the manufacture, installation, utilization, maintenance and repair of electrical systems and equipment to ensure satisfactory performance and compliance with specifications and regulations;                                   | yes                   | 4                          |
| (e) planning installation methods, checking completed installations for safety and controls or undertaking the initial running of the new electrical equipment or systems;  | yes                   | 4 + 5                      |
| (f) assembling, installing, testing, calibrating, modifying and repairing electrical equipment and installations to conform with regulations and safety requirements.   | yes                   | 1 + 2 + 3 + 4              |

| 3114  | Digitalization high % | Recommended                |
|---|-----------------------|----------------------------|
| <a href="#">back</a>  | (yes / no)            | Learning Units             |
|   |                       | ALL except 6 and 7         |
| <b>Electronics engineering technicians</b> perform technical tasks to aid in electronic research and in the design, manufacture, assembly, construction, operation, maintenance and repair of electronic equipment. |                       |                            |
| Tasks include -   |                       |                            |
| (a) providing technical assistance in research and development of electronic equipment, or testing prototypes;  | yes                   | 1 + 2 + 3 + 4 + 5 + 9 + 10 |
| (b) designing and preparing blueprints of electronic circuitry according to the specifications given;   | yes                   | 1 + 2 + 3 + 4 + 9          |
| (c) preparing detailed estimates of quantities and costs of materials and labour required for the manufacture and installation of electronic equipment, according to the specifications given;                      | yes                   | 4 + 5 + 9                  |
| (d) monitoring technical aspects of the manufacture, utilization, maintenance and repair of electronic equipment to ensure satisfactory performance and ensure compliance with specifications and regulations;      | yes                   | 4                          |
| (e) assisting in the design, development, installation, operation and maintenance of electronic systems;  | yes                   | 1 + 2 + 3 + 4 + 5          |
| (f) planning installation methods, checking completed installations for safety and controls or undertaking the initial running of the new electronic equipment or system;   | yes                   | 1 + 2 + 3 + 4 + 8          |
| (g) conducting tests of electronic systems, collecting and analysing data, and assembling circuitry in support of electronics engineers.  | yes                   | 1 + 2 + 3 + 4              |

| 3115  | Digitalization high % | Recommended                |
|---|-----------------------|----------------------------|
| <a href="#">back</a>  | (yes / no)            | Learning Units             |
|   |                       | ALL except 6 and 7         |
| <b>Mechanical engineering technicians</b> perform technical tasks to aid in mechanical engineering research and in the design, manufacture, assembly, construction, operation, maintenance and repair of machines, components and mechanical equipment. |                       |                            |
| Tasks include -   |                       |                            |
| (a) providing technical assistance in research on and development of machines and mechanical installations, facilities and components, or testing prototypes;   | yes                   | 1 + 2 + 3 + 4 + 5 + 9 + 10 |
| (b) designing and preparing layouts of machines and mechanical installations, facilities and components, according to the specifications given;   | yes                   | 1 + 2 + 3 + 4 + 9          |
| (c) preparing detailed estimates of quantities and costs of materials and labour required for manufacture and installation, according to the specifications given;  | yes                   | 4 + 5 + 9                  |
| (d) monitoring technical aspects of manufacture, utilization, maintenance and repair of machines and mechanical installations, facilities and components to ensure satisfactory performance and compliance with specifications and regulations;         | yes                   | 4                          |
| (e) developing and monitoring the implementation of safety standards and procedures for marine survey work in relation to ships' hulls, equipment and cargoes;  | yes                   | 1 + 2 + 3 + 4 + 5          |
| (f) assembling and installing new and modified mechanical assemblies, components, machine tools and controls, and hydraulic power systems;  | yes                   | 1 + 2 + 3 + 4 + 8          |
| (g) conducting tests of mechanical systems, collecting and analysing data, and assembling and installing mechanical assemblies in support of mechanical engineers;  | yes                   | 1 + 2 + 3 + 4              |
| (h) ensuring that mechanical engineering designs and finished work are within specifications, regulations and contract provisions.  | yes                   | 9                          |

| 3122   | Digitalization high % | Recommended           |
|--|-----------------------|-----------------------|
| <a href="#">back</a>   | (yes / no)            | Learning Units        |
|  |                       | ALL except 5 and 10   |
| <b>Manufacturing supervisors</b> coordinate and supervise the activities of process control technicians, machine operators, assemblers, and other manufacturing labourers. |                       |                       |
| Tasks include -  |                       |                       |
| (a) coordinating and supervising the activities of process control technicians, machine operators, assemblers and other manufacturing labourers;                           | yes                   | 1 + 2 + 3 + 4 + 7 + 8 |
| (b) organizing and planning the daily work with regard to plans, economy, staff and environment;   | yes                   | 6 + 8                 |
| (c) preparing cost estimates, records and reports;   | yes                   | 4 + 9                 |
| (d) identifying shortage of staff or components;   | yes                   | 4 + 8 + 9             |
| (e) ensuring safety of workers;  | yes                   | 9                     |
| (f) instructing and training new staff.  | yes                   | 7 + 8                 |

| 3139.2   | Digitalization high % | Recommended                      |
|--|-----------------------|----------------------------------|
| <a href="#">back</a>   | (yes / no)            | Learning Units                   |
| <b>Industrial robot controllers</b> operate and monitor industrial robots used in automation processes to perform various manufacturing activities such as lifting, welding and assembling. They ensure that the machines are working correctly and in sync with other industrial robots, maintain and repair defective parts, assess risks and perform tests. |                       | <b>ALL except 6, 7, 8 and 10</b> |
| Tasks include -  |                       |                                  |
| (a) adjust manufacturing equipment   | yes                   | 1 + 2 + 3 + 4 + 9                |
| (b) maintain control systems for automated equipment   | yes                   | 1 + 2 + 3 + 4 + 5 + 9            |
| (c) maintain robotic equipment   | yes                   | 1 + 2 + 3 + 4 + 9                |
| (d) monitor automated machines   | yes                   | 1 + 2 + 3 + 4                    |
| (f) perform machine maintenance  | yes                   | 1 + 2 + 3 + 4                    |
| (f) perform risk analysis  | yes                   | 4 + 9                            |
| (g) set up machine controls  | yes                   | 1 + 2 + 3 + 4 + 9                |
| (h) set up the controller of a machine   | yes                   | 1 + 2 + 3 + 4 + 9                |
| (i) wear appropriate protective gear   | no                    | -                                |

| 3511  | Digitalization high % | Recommended               |
|---|-----------------------|---------------------------|
| <a href="#">back</a>  | (yes / no)            | Learning Units            |
|   |                       | 1, 2, 3, 4, 5, 7, 8 and 9 |
| <b>Information and communications technology operations technicians</b> support the day-to-day processing, operation and monitoring of information and communications technology systems, peripherals, hardware, software and related computer equipment to ensure optimal performance and identify any problems. |                       |                           |
| Tasks include -   |                       |                           |
| (a) operating and controlling peripheral and related computer equipment;  | yes                   | 1 + 2 + 3 + 4 + 5         |
| (b) entering commands, using computer terminals, and activating controls on computer and peripheral equipment to integrate and operate equipment;   | yes                   | 1 + 2 + 3 + 4             |
| (c) monitoring systems for equipment failure or errors in performance;  | yes                   | 4                         |
| (d) notifying supervisors or maintenance technicians of equipment malfunctions;   | yes                   | 4 + 7                     |
| (e) responding to program error messages by finding and correcting problems, escalating the problem to other staff or terminating the program;  | yes                   | 4 + 7 + 8 + 9             |
| (f) reading job set-up instructions to determine equipment to be used, order of use, material such as disks and paper to be loaded, and to control settings;  | yes                   | 4 + 9                     |
| (g) retrieving, separating and sorting program output as needed, and sending data to specified users;   | yes                   | 4 + 9                     |
| (h) loading peripheral equipment, such as printers, with selected materials for operating runs, or overseeing loading of peripheral equipment by peripheral equipment operators.  | yes                   | 1 + 2 + 3 + 4 + 5         |

| 3512   | Digitalization high % | Recommended                      |
|--|-----------------------|----------------------------------|
| <a href="#">back</a>   | (yes / no)            | Learning Units                   |
|  |                       | <b>1, 2, 3, 4, 5, 7, 8 and 9</b> |
| <b>Information and communications technology user support technicians</b> provide technical assistance to users, either directly or by telephone, email or other electronic means, including diagnosing and resolving issues and problems with software, hardware, computer peripheral equipment, networks, databases and the Internet, and providing guidance and support in the deployment, installation and maintenance of systems. |                       |                                  |
| Tasks include -  |                       |                                  |
| (a) answering user inquiries regarding software or hardware operation to resolve problems;   | yes                   | 1 + 2 + 3 + 4 + 5 + 7            |
| (b) entering commands and observing system functioning to verify correct operations and detect errors;   | yes                   | 1 + 2 + 3 + 4                    |
| (c) installing and performing minor repairs to hardware, software or peripheral equipment, following design or installation specifications;  | yes                   | 4 + 9                            |
| (d) overseeing the daily performance of communications and computer systems;   | yes                   | 4 + 7                            |
| (e) setting up equipment for employee use and performing or ensuring proper installation of cables, operating systems or appropriate software;   | yes                   | 4 + 7 + 8 + 9                    |
| (f) maintaining records of daily data communication transactions, problems and remedial actions taken, or installation activities;   | yes                   | 4 + 9                            |
| (g) emulating or reproducing technical problems encountered by users;  | yes                   | 4 + 9                            |
| (h) consulting user guides, technical manuals and other documents to research and implement solutions;   | yes                   | 4 + 9                            |
| (i) assisting applications programmers, systems developers and other ICT professionals to develop and test ICT products and services.  | yes                   | 1 + 2 + 3 + 4 + 5 + 8            |

| 4132  | Digitalization high % | Recommended             |
|---|-----------------------|-------------------------|
| <a href="#">back</a>  | (yes / no)            | Learning Units          |
| <b>Data entry clerks</b> enter coded, statistical, financial and other numerical data into electronic equipment, computerized databases, spreadsheets or other data repositories using a keyboard, mouse, or optical scanner, speech recognition software or other data entry tools. They enter data into mechanical and electronic devices to perform mathematical calculations. |                       | <b>1, 2, 3, 4 and 9</b> |
| Tasks include -   |                       |                         |
| (a) receiving and registering invoices, forms, records and other documents for data capture;  | yes                   | 4                       |
| (b) entering numerical data, codes and text from source material into computer-compatible storage and processing devices;   | yes                   | 1 + 2 + 3 + 4 + 9       |
| (c) verifying accuracy and completeness of data and correcting entered data, if needed;   | yes                   | 4 + 9                   |
| (d) operating bookkeeping and calculating machines;   | yes                   | 4 + 9                   |
| (e) importing and exporting data between different database systems and software.   | yes                   | 1 + 2 + 3 + 4 + 9       |

| 4322  | Digitalization high % | Recommended    |
|---|-----------------------|----------------|
| <a href="#">back</a>  | (yes / no)            | Learning Units |
|   |                       | 3, 4 and 9     |
| <b>Production clerks</b> compute quantities of materials required at specified dates for manufacturing, construction and similar production programmes, and prepare and check production operation schedules. |                       |                |
| Tasks include -   |                       |                |
| (a) computing quantities, qualities and types of materials required by production programmes;   | yes                   | 4              |
| (b) preparing production requirements schedules, ensuring that materials are available when needed, and keeping relevant records;   | yes                   | 3 + 4 + 9      |
| (c) preparing or assisting in the preparation of production operation schedules on the basis of customers' orders and production capacity and performance;  | yes                   | 3 + 4 + 9      |
| (d) verifying stocks, arranging deliveries and investigating delays;  | yes                   | 3 + 4 + 9      |
| (e) recording and coordinating the flow of work and materials between departments.  | yes                   | 3 + 4 + 9      |

| 7115  | Digitalization high % | Recommended          |
|---|-----------------------|----------------------|
| <a href="#">back</a>  | (yes / no)            | Learning Units       |
|   |                       | <b>1, 2, 3 and 5</b> |
| <b>Carpenters and joiners</b> cut, shape, assemble, erect, maintain and repair various types of structures and fittings made from wood and other materials. |                       |                      |
| Tasks include -   |                       |                      |
| (a) making, altering and repairing structural and other woodwork at a workbench or on a construction site;  | yes                   | 1 + 2 + 3 + 5        |
| (b) constructing, erecting and installing heavy-framed wooden structures on building sites;   | no                    | -                    |
| (c) fitting, assembling and altering internal and external fixtures of buildings, such as walls, doors, door and window frames, facings and panelling;      | yes                   | 1 + 2 + 3 + 5        |
| (d) making, repairing and fitting scenic equipment for theatrical performances and motion picture or television productions;                                | yes                   | 1 + 2 + 3 + 5        |
| (e) constructing, assembling, altering and repairing wooden fixtures and fittings in train coaches, aircraft, ships, boats, floats and other vehicles.      | yes                   | 1 + 2 + 3 + 5        |

| 7317<br><a href="#">back</a>   | Digitalization high %<br>(yes / no) | Recommended<br>Learning Units |
|--|-------------------------------------|-------------------------------|
| <b>Handicraft workers in wood, basketry and related materials</b> apply traditional techniques such as seasoning or impregnation to prepare wood, straw, rattan, reeds, clay, shells and other materials, and carve, mould, assemble, weave or paint and decorate various articles for personal or household use or for decorative purposes. Basketry weavers, brush makers and related workers select and prepare materials such as bristles, nylon, fibre, bass, whisker and wire to make wicker furniture, brushes and brooms, and to weave various kinds of baskets. |                                     | <b>1, 2, 3 and 5</b>          |
| Tasks include -  |                                     |                               |
| (a) preparing wood, straw, rattan, reeds, shells or similar materials;   | yes                                 | 1 + 2 + 3 + 5                 |
| (b) carving floral and artistic designs on wooden surfaces for decorative purposes;  | yes                                 | 1 + 2 + 3 + 5                 |
| (c) painting <b>freehand</b> decorative designs on glass and pottery or porcelain ware;  | yes                                 | 1 + 2 + 3 + 5                 |
| (d) carving, assembling, weaving, painting and decorating various articles for personal or household use such as salad bowls, serving spoons, cutting-boards, trays, vases, jugs, baskets, straw hats, straw mats and similar objects;   | yes                                 | 1 + 2 + 3 + 5                 |
| (e) carving, assembling, weaving and painting various decorative articles such as statues and other sculptures, chess pieces, jewellery and similar objects;   | yes                                 | 1 + 2 + 3 + 5                 |
| (f) making wicker furniture from peeled and softened rattan, reeds, rushes, willow branches and similar materials;   | no                                  | -                             |
| (g) making various kinds of baskets by interlacing osier, rattan, reeds, rushes and similar materials;   | no                                  | -                             |
| (h) forming bottoms of baskets by interlacing strips of rattan, wood veneer or other materials with frameworks of rods of material such as willow;   | no                                  | -                             |
| (i) inserting rods around bottom edges between woven sections of bottom and bending them upright to serve as framework for sides;  | no                                  | -                             |
| (j) selecting and preparing brush materials such as bristles, nylon, fibres and wire, and setting them in brush base;  | yes                                 | 1 + 2 + 3 + 5                 |
| (k) selecting and preparing materials such as broom corn, bass, whisker and fibre, and fastening them to broom handles.  | yes                                 | 1 + 2 + 3 + 5                 |

| 7521  | Digitalization high % | Recommended                |
|---|-----------------------|----------------------------|
| <a href="#">back</a>  | (yes / no)            | Learning Units             |
|   |                       | ALL except 6, 7 and 8      |
| <b>Wood treaters</b> season, preserve and treat wood and lumber manually or using wood treatment equipment such as kilns and tanks.   |                       |                            |
| Tasks include -   |                       |                            |
| (a) operating and tending kilns, treating tanks and other equipment to dry lumber, prepare and season wood and other wood products, and to impregnate wood products with preservatives;         | yes                   | 1 + 2 + 3 + 4 + 5 + 9 + 10 |
| (b) monitoring equipment operation, gauges and panel lights in order to detect deviations from standards and to ensure that processes are operating according to specifications;                | yes                   | 4                          |
| (c) operating valves to admit treating solution into treatment vessels, maintain specified heat, vacuum and hydraulic pressure and levels of solution during each phase of the treatment cycle; | yes                   | 1 + 2 + 3                  |
| (d) activating vacuum and hydraulic pressure pumps that remove air and steam from retorts and force treating solution into pores of wood to accelerate the treatment process;                   | yes                   | 1 + 2 + 3 + 9              |
| (e) assisting in maintaining processing equipment and machines as required;   | yes                   | 4 + 9                      |
| (f) cleaning, lubricating and adjusting equipment;  | no                    | 4 + 9 + 10                 |
| (g) transporting materials and products to and from work areas manually or using carts, handtrucks or hoists;   | yes                   | 3 + 4 + 9                  |
| (h) completing and maintaining production reports.  | yes                   | 4 + 9                      |

| 7522  | Digitalization high % | Recommended                |
|---|-----------------------|----------------------------|
| <a href="#">back</a>  | (yes / no)            | Learning Units             |
|   |                       | ALL except 6, 7 and 8      |
| <b>Cabinet-makers and related workers</b> make, decorate and repair wooden furniture, carts and other vehicles, wheels, parts, fittings, patterns, models and other wooden products using woodworking machines, machine tools and specialized hand tools. |                       |                            |
| Tasks include -   |                       |                            |
| (a) operating woodworking machines such as power saws, jointers, mortisers and shapers, and using hand tools to cut, shape and form parts and components;   | yes                   | 1 + 2 + 3 + 4 + 5 + 9 + 10 |
| (b) studying plans, verifying dimensions of articles to be made, or preparing specifications and checking the quality and fit of pieces in order to ensure adherence to specifications;   | yes                   | 4 + 9                      |
| (c) trimming joints and fitting parts and subassemblies together to form complete units using glue and clamps, and reinforcing joints using nails, screws or other fasteners;   | yes                   | 1 + 2 + 3 + 4 + 10         |
| (d) making, restyling and repairing various wooden articles such as cabinets, furniture, vehicles, scale models, sports equipment and other parts or products;  | yes                   | 1 + 2 + 3 + 4              |
| (e) decorating furniture and fixtures by inlaying wood or applying veneer and carving designs;  | yes                   | 1 + 2 + 3                  |
| (f) finishing surfaces of wooden articles or furniture.   | yes                   | 1 + 2 + 10                 |

| 7523   | Digitalization high % | Recommended            |
|--|-----------------------|------------------------|
| <a href="#">back</a>   | (yes / no)            | Learning Units         |
|  |                       | ALL except 6, 8 and 10 |
| <b>Woodworking machine tool setters and operators</b> set-up, operate and monitor automatic or semi-automatic woodworking machines such as precision sawing, shaping, planing, boring, turning and woodcarving machines to fabricate or repair wooden parts for furniture, fixtures and other wooden products. |                       |                        |
| Tasks include -  |                       |                        |
| (a) setting up, programming, operating and monitoring several types of woodworking machines for sawing, shaping, boring, drilling, planing, pressing, turning, sanding or carving to fabricate or repair wooden parts for furniture, fixtures and other wooden products;                                       | yes                   | 1 + 2 + 3 + 4 + 5 + 9  |
| (b) operating preset special-purpose woodworking machines to fabricate wooden products such as coat hangers, mop handles, clothespins and other products;  | yes                   | 1 + 2 + 3 + 4          |
| (c) selecting knives, saws, blades, cutter heads, cams, bits or belts according to work piece, machine functions and product specifications;   | yes                   | 1 + 2 + 3              |
| (d) installing and adjusting blades, cutter heads, boring-bits and sanding-belts, and using hand tools and rules;  | no                    | -                      |
| (e) setting and adjusting various kinds of woodworking machines for operation by others;   | yes                   | 1 + 2 + 3 + 7          |
| (f) reading and interpreting specifications or following verbal instructions.  | yes                   | 4 + 9                  |

| 7534<br><a href="#">back</a>  | Digitalization high %<br>(yes / no) | Recommended<br>Learning Units |
|---|-------------------------------------|-------------------------------|
|   |                                     | ALL except 4, 6 and 8         |
| <b>Upholsterers and related workers</b> install, repair and replace upholstery of furniture, fixtures, orthopaedic appliances, seats, panels, convertible and vinyl tops and other furnishings of automobiles, railway coaches, aircraft, ships and similar items with fabric, leather, rexine or other upholstery material. They also make and repair cushions, quilts and mattresses. |                                     |                               |
| Tasks include -   |                                     |                               |
| (a) discussing upholstery fabric, colour and style with customers and providing cost estimates for upholstering furniture or other items;   | yes                                 | 1 + 2 + 3 + 5 + 7 + 9 + 10    |
| (b) making upholstery patterns from sketches, customer descriptions or blueprints;  | yes                                 | 1 + 2 + 3                     |
| (c) laying out, measuring and cutting upholstery materials following patterns, templates, sketches or design specifications;  | yes                                 | 1 + 2 + 3                     |
| (d) installing, arranging and securing springs, padding and covering material to furniture frames;  | yes                                 | 1 + 2                         |
| (e) sewing upholstery materials <b>by-hand</b> to seam cushions and joining sections of covering materials;   | yes                                 | 1 + 2                         |
| (f) sewing rips or tears in material, or creating tufting, using needle and thread;   | yes                                 | 1 + 2                         |
| (g) tacking, gluing or sewing ornamental trims, buckles, braids, buttons and other accessories to covers or frames on upholstered items;  | yes                                 | 1 + 2                         |
| (h) laying out, cutting, fabricating and installing upholstery in aircrafts, motor vehicles, railway cars, boats and ships;   | yes                                 | 1 + 2                         |
| (i) repairing raw hide coverings of artificial limbs;   | no                                  | -                             |
| (j) renovating antique furniture using a variety of tools including ripping chisels, magnetic hammers and long needles;   | no                                  | -                             |
| (k) collaborating with interior designers to decorate rooms and coordinate furnishing fabrics;  | yes                                 | 7                             |
| (l) making quilts, cushions and mattresses.   | yes                                 | 1 + 2                         |

| 8172   | Digitalization high % | Recommended       |
|--|-----------------------|-------------------|
| <a href="#">back</a>   | (yes / no)            | Learning Units    |
|  |                       | 1, 2, 3, 4 and 9  |
| <b>Wood processing plant operators</b> monitor, operate and control lumber mill equipment for sawing timber logs into rough lumber, cutting veneer, making plywood and particle board, and otherwise preparing wood for further use.   |                       |                   |
| Tasks include -  |                       |                   |
| (a) examining logs and rough lumber to determine size, condition, quality and other characteristics to decide best lumber cuts to carry out, or operating automated equipment to convey logs through laser scanners which determine the most productive and profitable cutting patterns; | yes                   | 1 + 2 + 3 + 4 + 9 |
| (b) operating and monitoring log in-feed and conveyor systems;   | yes                   | 1 + 2 + 3 + 4 + 9 |
| (c) operating and monitoring head saws, resaws and multiblade saws to saw logs, cants, flitches, slabs or wings and remove rough edges from sawn timber into dressed lumber of various sizes, and to saw or split shingles and shakes;   | yes                   | 1 + 2 + 3 + 4 + 9 |
| (d) operating and monitoring plywood core-laying machines and hot-plate plywood presses and machines which cut veneer;   | yes                   | 1 + 2 + 3 + 4 + 9 |
| (e) cleaning and lubricating sawmill equipment.  | no                    | 1 + 2 + 3 + 4 + 9 |

| 8219   | Digitalization high % | Recommended      |
|--|-----------------------|------------------|
| <a href="#">back</a>   | (yes / no)            | Learning Units   |
|  |                       | 1, 2, 3, 4 and 9 |
| <p><b>Furniture assemblers</b> place together all parts of furniture and auxiliary items such as furniture legs and cushions. They may also fit springs or special mechanisms. Furniture assemblers follow instructions or blueprints to assemble the furniture, and use hand tools and power tools.</p> |                       |                  |
| <p>Tasks include -</p>   |                       |                  |
| <p>(a) assembling component parts and positioning, aligning and fastening units to assemblies, subassemblies or frames using hand or power tools;</p>  | yes                   | 1 + 2 + 3 + 9    |
| <p>(b) reviewing work orders, specifications, diagrams and drawings to determine materials needed and assembly instructions;</p>   | yes                   | 2 + 3 + 4 + 9    |
| <p>(c) recording production and operational data on specified forms;</p>   | yes                   | 2 + 3 + 4 + 9    |
| <p>(d) inspecting and testing components and completed assemblies;</p>   | yes                   | 2 + 3 + 4 + 9    |
| <p>(e) rejecting faulty products.</p>  | yes                   | 2 + 3 + 9        |

| 9329   | Digitalization high % | Recommended    |
|--|-----------------------|----------------|
| <a href="#">back</a>   | (yes / no)            | Learning Units |
|  |                       | 1, 2, 3 and 9  |
| <b>Factory hands</b> assist machine operators and product assemblers. They clean the machines and the working areas. Factory hands make sure supplies and materials are replenished. |                       |                |
| Tasks include -  |                       |                |
| (a) conveying goods, material, equipment and other items to work areas, and removing finished pieces;  | yes                   | 1 + 2 + 3 + 9  |
| (b) loading and unloading vehicles, trucks and trolleys;   | yes                   | 2 + 3 + 9      |
| (c) clearing machine blockages, and cleaning machinery, equipment and tools;   | no                    | 2 + 3 + 9      |
| (d) carrying out <b>manual</b> sorting of products or components.  | yes                   | 2 + 3 + 9      |