



Learner Centric Advanced Manufacturing Platform

D7.3 “Catalogo dei corsi di formazione per le PMI e benchmark”

WP7 Collegamento PMI – IFP



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GLOSSARIO E/O ACRONIMI

5S – Metodo di organizzazione del posto di lavoro derivato dalla produzione lean
ADMA – Progetto europeo ADMA Transformers - European Advanced Manufacturing Support Centre (Centro europeo di supporto alla Manifattura Avanzata=
AFIL – Associazione Fabbrica Intelligente Lombardia
AFM – Associazione spagnola delle tecnologie di Manifattura Avanzata (Asociación Española de Fabricantes de Máquinas-herramienta, Accesorios, Componentes y Herramientas)
BI – Business Intelligence
CAD – Computer-Aided Design (Progettazione assistita da computer)
CAM – Computer-Aided Manufacturing
CMQE – Campus des Métiers et des Qualifications d'Excellence (Centro di eccellenza per la formazione professionale e le qualifiche)
CNC – Computer Numerical Control (Controllo numerico computerizzato)
CRM – Customer Relationship Management (Gestione delle relazioni con i clienti)
CSR – Corporate Social Responsibility (Responsabilità sociale d'impresa)
ERP – Enterprise Resource Planning (Pianificazione delle risorse aziendali)
ESG – Environmental, Social and Governance (Ambientale, sociale e di governance)
EU – European Union (Unione Europea)
HR – Human Resources (Risorse Umane)
IA – Intelligenza Artificiale
ICT – Information and Communication Technology (Tecnologia dell'informazione e della comunicazione)
IFP – Istruzione e Formazione Professionale
IoT – Internet of Things (Internet delle cose)
IT – Information Technology (Tecnologia dell'informazione)
KIC – Knowledge Intensive Company (Impresa ad alta intensità di conoscenza)
KPI – Key Performance Indicator (Indicatore chiave di prestazione)
LCAMP – Learner Centric Advanced Manufacturing Platform (Piattaforma per la Manifattura Avanzata incentrata sullo studente)
MADE – Competence Center Industria 4.0
MES – Manufacturing Execution System (Sistema di esecuzione della produzione)
MOOC – Massive Online Training Course (Corso di formazione online di massa)
PMI – Piccole e Medie Imprese
R&D – Research and Development (Ricerca e Sviluppo)
SaaS – Software as a Service (Software come Servizio)



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SINTESI

Questa relazione fornisce una panoramica completa del panorama formativo progettato per supportare le PMI nella loro trasformazione digitale, organizzativa e sostenibile. Presenta un catalogo strutturato di 109 attività formative fornite da partner in otto paesi, ciascuna mappata in base alle aree di trasformazione e ai livelli di maturità ADMA per facilitare un aggiornamento professionale mirato. La relazione include un'analisi comparativa dei principali fornitori internazionali di formazione. Questi elementi offrono al lettore una chiara comprensione delle opportunità di formazione esistenti e di come queste si allineano alle esigenze identificate nelle valutazioni di maturità delle PMI, aiutando i lettori a identificare chiaramente le opportunità di formazione più rilevanti per le PMI e come queste possono essere utilizzate per supportare il loro percorso di trasformazione.

Questa relazione si concentra sul rafforzamento del collegamento tra le Piccole e Medie Imprese (PMI) e l'ecosistema dell'Istruzione e Formazione Professionale (IFP) attraverso metodologie strutturate, attività diagnostiche pratiche e una mappatura completa delle opportunità formative. Il lavoro integra tre componenti chiave: la metodologia ADMA, il modello di Collaborative Learning Factory (CLF) e le evidenze raccolte dalle analisi delle PMI e dai piani di trasformazione.

La metodologia ADMA ha rappresentato il pilastro fondamentale per comprendere il livello di maturità digitale, organizzativa e legata alla sostenibilità delle PMI. Le 59 PMI analizzate in otto Paesi (Paesi Baschi – Spagna, Canada, Francia, Germania, Italia, Slovenia, Svezia e Turchia) mostrano punti di forza ricorrenti nell'orientamento al cliente e nell'organizzazione umano-centrica. Allo stesso tempo, emergono debolezze ricorrenti nella Smart Manufacturing (bassi livelli di automazione e uso limitato dei dati in tempo reale), nella Digital Factory (criticità nell'integrazione dei sistemi), nella ECO Factory (pratiche di sostenibilità non uniformi) e nella Value Chain Oriented Open Factory (limitata cooperazione esterna). Questi risultati forniscono un chiaro indirizzo per la definizione delle priorità formative all'interno di LCAMP.

Per rispondere a tali esigenze, la relazione presenta un sistema di doppia indicizzazione che organizza le attività formative secondo le sette aree di trasformazione ADMA e secondo cinque livelli di progressione della maturità, che vanno dalla consapevolezza iniziale all'eccellenza. Questa struttura consente alle PMI di individuare facilmente le offerte formative più rilevanti per il loro stadio di sviluppo e di pianificare la propria evoluzione verso modelli digitali e organizzativi più avanzati.

Un risultato chiave di questo lavoro è la creazione di un catalogo di 109 attività formative allineate alle trasformazioni ADMA. Tali opportunità formative provengono dai Paesi Baschi – Spagna (31), Canada (10), Francia (10), Germania (9), Italia (18), Slovenia (10), Svezia (10) e Turchia (11). Tutte e sette le aree di trasformazione ADMA sono rappresentate, con una copertura particolarmente forte nelle Tecnologie di Produzione Avanzate, nella Digital Factory e nella Smart Manufacturing, ovvero le aree in cui le PMI hanno mostrato il maggiore bisogno di miglioramento.

Inoltre, è stato condotto un esercizio di benchmarking su sei importanti fornitori di formazione internazionali (Coursera, EIT Manufacturing, Fraunhofer-Gesellschaft, Mondragon Unibertsitatea, POLIMI Open Knowledge e Udemy). Questi fornitori offrono un'ampia formazione nelle stesse aree di trasformazione risultate più deboli nelle analisi delle PMI, rafforzando la rilevanza delle scelte strategiche di LCAMP.

Nel complesso, questa relazione fornisce un catalogo formativo orientato alle PMI che supporta la trasformazione digitale, la sostenibilità e l'innovazione umano-centrica. Combinando evidenze diagnostiche, percorsi strutturati di maturità, offerte formative pratiche e buone pratiche internazionali, LCAMP si posiziona per offrire soluzioni di apprendimento in grado di accelerare la competitività delle PMI e preparare la forza lavoro alle sfide dell'Industria 4.0 e 5.0.



1. INTRODUZIONE

Il lavoro svolto nel WP7 ha generato conoscenze di grande valore su come collegare le PMI all'ecosistema IFP attraverso metodologie strutturate e attività di implementazione pratica. La combinazione di quadri concettuali come ADMA e CLF, insieme all'esperienza concreta maturata nelle analisi delle PMI e nei piani di trasformazione, offre una visione completa delle opportunità e delle sfide legate al percorso verso l'Industria 4.0 e 5.0.

Questa sezione riassume i principali risultati ottenuti nei rapporti precedenti, evidenziando la rilevanza della metodologia ADMA come strumento di diagnosi e trasformazione e delle Collaborative Learning Factories (CLF) come modello educativo che collega industria e formazione. Insieme, essi costituiscono la base su cui verrà sviluppato il catalogo formativo.

Per rendere il catalogo formativo uno strumento pratico e strategico per le PMI, è essenziale organizzare la vasta gamma di offerte formative disponibili in modo chiaro e strutturato. Il sistema di indicizzazione progettato all'interno di LCAMP risponde a questa esigenza, garantendo che ogni corso di formazione possa essere facilmente collegato alle specifiche esigenze di trasformazione delle imprese e al loro livello di maturità digitale.

1.1. SINTESI DEI PRECEDENTI RAPPORTI DEL WP7

All'interno del progetto LCAMP, è presente una linea di lavoro dedicata al rafforzamento del collegamento tra l'Istruzione e Formazione Professionale (IFP) e le PMI. Queste imprese stanno affrontando processi di trasformazione digitale e, attraverso la metodologia ADMA, il sistema IFP può fornire strumenti e conoscenze per migliorarne la competitività e la sostenibilità.

Tra le attività svolte finora, è opportuno evidenziare l'integrazione della metodologia ADMA nel framework LCAMP attraverso le Collaborative Learning Factories (CLF). Inoltre, sono state condotte diverse analisi di PMI e sono stati sviluppati piani di implementazione per supportare i loro processi di trasformazione.

Metodologia ADMA e Collaborative Learning Factory (CLF)

La metodologia ADMA (Advanced Manufacturing Support Centre), promossa dalla Commissione Europea e ulteriormente sviluppata nell'ambito del progetto ADMA Trans4MErs, fornisce un quadro di riferimento per la trasformazione digitale e sostenibile delle PMI industriali. Essa è strutturata in sette aree chiave:

- T1 – Advanced Manufacturing Technologies (Tecnologie avanzate di produzione): analisi dello stato dell'arte dei dispositivi e dei macchinari di produzione; focus sulla visione aziendale, sul livello di capacità e sul livello di implementazione;
- T2 – Digital Factory (Fabbrica digitale): valutazione dell'implementazione delle tecnologie digitali per trasformare lo sviluppo di prodotti e/o processi in prodotti fisici, sistemi o servizi; focus sulle infrastrutture abilitanti e sulle capacità digitali;



- T3 – ECO Factory (Fabbrica eco sostenibile): analisi dell'approccio alla riduzione dei costi e dei rischi e all'efficienza nell'uso delle materie prime, nonché alla fornitura e al consumo energetico e all'uso di fonti rinnovabili; focus sulla gestione delle risorse e sulla conformità e innovazione;
- T4 – End-to-end Customer Focused Engineering (Progettazione orientata al cliente sul ciclo di vita): valutazione di come le aspettative dei clienti, insieme alla progettazione interfunzionale e interdipartimentale, possano portare a nuovi sviluppi e processi; focus sull'orientamento al cliente e sulla proposta di valore, nonché su processi di ingegneria robusti;
- T5 – Human-centred Organization (Organizzazione centrata sull'uomo): analisi di opportunità e modalità con cui ai lavoratori viene concessa autonomia e spazio per esprimere talento, creatività e iniziativa, anche attraverso la valutazione continua delle competenze e il loro aggiornamento; focus sul singolo dipendente, sul team, sulla leadership e sull'organizzazione interna;
- T6 – Smart Manufacturing (Produzione intelligente): valutazione della combinazione tra l'uso intelligente delle capacità delle persone, l'uso intelligente della tecnologia e l'implementazione di un sistema produttivo (auto-)apprendente; focus sull'interazione uomo-macchina e sui processi di pianificazione e controllo della produzione;
- T7 – Value Chain Oriented Open Factory (Fabbrica aperta integrata nella filiera): analisi della capacità dell'azienda di sviluppare prodotti, processi produttivi e servizi considerando l'intera catena del valore; focus sulla cooperazione e sulle partnership, nonché sulla gestione delle competenze e delle conoscenze esterne.

Il modello di Collaborative Learning Factory (CLF), sviluppato all'interno di LCAMP, descrive ambienti di apprendimento che replicano processi industriali reali nei centri IFP. È strutturato in otto dimensioni:

- Modello operativo: le CLF richiedono modelli operativi solidi che coprano aspetti finanziari, di personale e tematici. Un finanziamento adeguato è fondamentale e possono essere esplorati diversi modelli. Il personale deve possedere competenze tecniche e didattiche.
- Destinatari e finalità: le CLF si rivolgono sia a studenti sia a lavoratori, offrendo esperienze di apprendimento immersive e sviluppo professionale continuo nella Manifattura Avanzata.
- Processo: il processo CLF comprende quattro fasi - progettazione del prodotto, ingegneria di processo, produzione e gestione della supply chain - simulando scenari reali.
- Contesto: la configurazione è determinata dall'infrastruttura tecnologica, dalle tipologie di utenti e dalle competenze.
- Prodotto: il prodotto selezionato influenza competenze e tecnologie.
- Didattica: focus su framework di competenze standardizzati.
- Metriche: le metriche valutano l'efficacia, includendo il numero di tecnologie Industria 4.0 implementate, gli sviluppi collaborativi e la soddisfazione degli studenti.
- Collaborazione: la collaborazione tra i partecipanti è fondamentale e favorisce innovazione e sviluppo delle competenze.

Sia la metodologia ADMA sia il modello CLF presentano connessioni rilevanti che consentono di trasferire la logica della maturità digitale delle imprese al contesto educativo, permettendo la creazione di percorsi di apprendimento che preparano studenti e lavoratori alle sfide dell'Industria 4.0 e 5.0.



ADMA Scans e piani di implementazione

Nel progetto LCAMP sono state effettuate 59 analisi (i.e. ADMA Scans) di PMI in otto Paesi (Paesi Baschi – Spagna, Canada, Francia, Germania, Italia, Slovenia, Svezia e Turchia), insieme a piani di implementazione per aziende selezionate. I risultati mostrano un'ampia varietà di livelli di maturità digitale, ma evidenziano anche tendenze comuni:

Punti di forza ricorrenti:

- End-to-End Customer Focused Engineering: orientamento al cliente.
- Human-centred Organization.

Debolezze ricorrenti:

- Smart Manufacturing: bassi livelli di automazione e uso limitato dei dati in tempo reale.
- Digital Factory: difficoltà nell'integrazione dei sistemi e nella connettività.
- Value Chain Oriented Open Factory: debole collaborazione esterna e limitata open innovation.
- ECO Factory: implementazione non uniforme della sostenibilità.

I piani di implementazione includono azioni quali l'adozione di IoT e sensoristica, l'automazione dei processi, l'uso di Business Intelligence e digital twin, l'integrazione di pratiche di sostenibilità e l'introduzione di programmi di formazione interna per rafforzare le competenze digitali.

Implicazioni per il catalogo formativo

Sulla base delle evidenze raccolte nelle relazioni precedenti, sono state identificate diverse priorità formative per guidare lo sviluppo del catalogo formativo per le PMI:

- Competenze in automazione e Smart Manufacturing (robotica collaborativa, manutenzione predittiva, sistemi di controllo e sensoristica).
- Digital Factory: integrazione dei sistemi (ERP, MES, SCADA), gestione dei dati, cybersecurity.
- Sostenibilità industriale: efficienza energetica, eco-design, economia circolare.
- Competenze digitali trasversali: analisi dei dati, uso dell'Intelligenza Artificiale applicata alla produzione, strumenti digitali collaborativi.
- Competenze organizzative: gestione del cambiamento, leadership digitale, cultura dell'innovazione.

Le CLF e i centri IFP svolgono un ruolo chiave nell'offrire ambienti di apprendimento pratici in cui tali competenze possono essere sviluppate in contesti molto simili alla realtà industriale.

In conclusione, l'integrazione dei framework ADMA e CLF con le evidenze pratiche derivanti dalle diagnosi delle PMI giustifica la necessità di un catalogo formativo strutturato attorno a percorsi di maturità digitale. Tale catalogo dovrebbe concentrarsi sulle aree di minore maturità (Smart Manufacturing, Digital Factory, ECO Factory e Value Chain Oriented Open Factory), rafforzando al contempo i punti di forza esistenti nell'End-to-End Customer Focused Engineering e nella Human-centred Organization. In questo modo, le PMI saranno supportate nella loro transizione verso modelli più digitali, sostenibili e orientati alle persone, in linea con i principi dell'Industria 5.0.



1.2. CATEGORIE E CLASSIFICAZIONE DELLA FORMAZIONE

Per fornire alle PMI un catalogo strutturato e pratico di opportunità formative, il progetto ha progettato un sistema di doppia indicizzazione. Questo approccio garantisce che i 109 corsi di formazione raccolti - provenienti dai Paesi Baschi – Spagna (31), Canada (10), Francia (10), Germania (9), Italia (18), Slovenia (10), Svezia (10) e Turchia (11) - siano allineati alle aree strategiche di trasformazione definite dalla metodologia ADMA e posizionati all'interno di un chiaro percorso di maturità che riflette lo sviluppo progressivo delle competenze digitali, organizzative e di sostenibilità.

Indicizzazione per aree di trasformazione ADMA

Il primo indice organizza tutti i corsi di formazione secondo le sette aree di trasformazione ADMA, che definiscono le dimensioni critiche della trasformazione industriale verso l'Industria 4.0 e 5.0. Queste aree costituiscono la struttura portante del catalogo formativo:

- T1 – Advanced Manufacturing Technologies – Utilizzo di tecnologie produttive all'avanguardia, robotica, manifattura additiva, automazione e sistemi di controllo qualità.
- T2 – Digital Factory – Integrazione di strumenti e piattaforme digitali quali ERP, MES, SCADA, digital twin e misure di cybersecurity, per una produzione connessa e basata sui dati.
- T3 – ECO Factory – Strategie per la produzione sostenibile, efficienza energetica, ottimizzazione delle risorse, economia circolare ed eco-design.
- T4 – End-to-end Customer Focused Engineering – Progettazione di prodotti e processi orientata al cliente, integrazione dei feedback e personalizzazione delle soluzioni.
- T5 – Human-centred Organization – Cultura organizzativa, empowerment dei dipendenti, leadership digitale, sviluppo delle competenze e ambienti di lavoro inclusivi.
- T6 – Smart Manufacturing – Sistemi autonomi, manutenzione predittiva, analisi avanzata, ottimizzazione basata su IA e pianificazione intelligente della produzione.
- T7 – Value Chain Oriented Open Factory – Collaborazione lungo l'intera catena del valore, partnership, reti di open innovation e piattaforme condivise per il co-sviluppo.

La classificazione dei corsi in queste sette aree consente alle PMI e ai fornitori di formazione di identificare quali dimensioni della trasformazione vengono affrontate da ciascun corso. In molti casi, un singolo corso può contribuire a più di un'area.



Indicizzazione per livelli di maturità all'interno di ciascuna area di trasformazione

Il secondo indice perfeziona questa classificazione specificando, per ciascuna area di trasformazione ADMA, il livello di maturità a cui il corso è destinato. Il framework di maturità comprende cinque fasi progressive, che vanno dalla consapevolezza di base alla trasformazione avanzata e integrata:

- Dal Livello 0 al Livello 1 – Consapevolezza Iniziale: la formazione supporta le imprese nel riconoscere l'importanza della trasformazione digitale e della sostenibilità, fornendo conoscenze introduttive, alfabetizzazione digitale di base e capacità di comprendere opportunità e rischi.
- Dal Livello 1 al Livello 2 – Introduzione Strutturata: le imprese passano dalla consapevolezza alla sperimentazione strutturata. La formazione consente l'adozione dei primi strumenti digitali o organizzativi (ad es. automazione semplice, utilizzo base di ERP o pratiche introduttive di eco-design).
- Dal Livello 2 al Livello 3 – Consolidamento e Integrazione: la formazione supporta l'integrazione delle tecnologie digitali e delle pratiche di sostenibilità nelle operazioni quotidiane, come il monitoraggio automatizzato della produzione, l'uso di strumenti di Business Intelligence, la gestione energetica sistematica o programmi strutturati di sviluppo del personale.
- Dal Livello 3 al Livello 4 – Implementazione Avanzata: la formazione aiuta le imprese a scalare e ottimizzare i propri sistemi, includendo manutenzione predittiva basata su IoT e IA, integrazione completa ERP-MES-SCADA e reti collaborative con fornitori e partner.
- Dal Livello 4 al Livello 5 – Eccellenza e Leadership: al livello più alto di maturità, la formazione prepara le imprese ad agire come benchmark di settore, implementando smart factory avanzate basate su IA, elevati livelli di circolarità e sostenibilità e modelli organizzativi human-centred di riferimento.

Collegando ogni opportunità formativa a una specifica transizione di maturità, le PMI possono identificare facilmente i corsi più rilevanti per il proprio stadio attuale e pianificare un percorso di crescita graduale verso livelli più elevati di maturità digitale e competitività.

Valore aggiunto della doppia indicizzazione

Questo sistema di indicizzazione a due livelli garantisce sia l'allineamento strategico (attraverso le aree di trasformazione ADMA) sia la progressione pratica (attraverso i livelli di maturità). Il primo indice risponde alla domanda: *“Quale area di trasformazione supporta questo corso?”* Il secondo risponde a: *“In quale stadio di maturità questo corso genera impatto?”*

Insieme, essi forniscono alle PMI una roadmap che collega offerte formative specifiche al loro percorso di trasformazione digitale, facilitando decisioni informate nella selezione dei corsi e aiutando i centri IFP e i decisori politici ad allineare le strategie educative alle reali esigenze dell'industria.



2. INDICI DEI CORSI DI FORMAZIONE

2.1. INDICE GENERALE DEI CORSI DI FORMAZIONE IDENTIFICATI

TRAINING COURSE	TRANSFORMATION AREA							Page
	Advanced Manufacturing Technologies	Digital Factory	Eco Factory	End-to-end Customer Focused Engineering	Human Centred Organization	Smart Manufacturing	Value Chain Oriented Open Factory	
3D Modeling		x						21
3D Printing and Additive Manufacturing	x	x						22
3D Scanning - Reverse Engineering	x	x						23
3D Scan (France)	x							24
3D Scan (Spain)	x	x				x		25
3D Verification. M-COSMOS	x	x				x		26
3 to 5 axis milling techniques with creo machining	x							27
5S Workplace Organization					x			28
ABB Robot Start-up	x	x				x		29
Additive Manufacturing, 3D Printing	x	x				x		30
Advanced Programming (Siemens S7 1500 PLC with TIA Portal)		x				x		31
Applied Computing Project				x				32
Applied Project Management Integration Project				x				33
AR assistive assembly station - Arkite	x	x						34
Artificial Intelligence		x						35
Artificial Intelligence Applied to Learning Factories	x	x		x		x		36
Artificial Vision Programming	x	x		x		x		37
Automation and Robotics		x						38
Basic Programming (PLC Siemens S7 1500 with TIA Portal)		x				x		39
Basics of Automation with PLC						x		40
Blockchain Technology and platforms for industry						x		41
CAM 5 Axis	x							42
CAM Basics	x							43
CAM NX (2 1/2 and 3 axis milling machine)	x	x				x		44
CAM of subtractive machining processes	x							45
CNC machining from CAM	x							46
CNC machine Operation Basics	x							47
CNC Waste Reduction Strategies			x					48
Collaborative Robot	x	x				x		49
Component inspection using a coordinate measuring machine	x							50
Connected Workers		x			x	x		51
Corporate sustainability basics			x					52
Cybersecurity		x						53
Cybersecurity in Industry		x						54
Development of an Environmental Responsibility and Circular Economy Plan			x		x			55
Design 4.0		x		x		x		56
Design for Additive Manufacturing	x							57
Design of Manufacturing	x							58
Digital Operation		x				x		59
Digital Transformation Pathway		x				x		60
Electrical Discharge Machining (EDM)	x	x						61
Electronic Assembly	x	x						62
Engineering Project Management				x				63
Ergonomics in Industry 5.0		x			x	x		64
Factory Logistics 4.0		x				x	x	65
Fanuc industrial robot programming	x							66
Free-form surface modeling	x							67
Functional Safety	x					x		68
Fundamentals of robotics	x	x						69



TRAINING COURSE	TRANSFORMATION AREA							Page
	Advanced Manufacturing Technologies	Digital Factory	Eco Factory	End-to-end Customer Focused Engineering	Human Centred Organization	Smart Manufacturing	Value Chain Oriented Open Factory	
Human-Centric Technologies & Ergonomic Innovation		x			x	x		70
Industrial communication	x					x		71
Industrial Robot Programming. Level 1 (ABB, FANUC, KUKA)	x	x		x		x		72
Industrial Robot Programming. Level 2 (ABB, FANUC, KUKA)	x	x		x		x		73
Industry 4.0 & 5.0 communication architecture	x					x		74
Installation and Maintenance of Industrial Automation Systems	x	x						75
Installation and maintenance of collaborative robots 'COBOTS'	x	x						76
Introduction to Carbon Footprint			x					77
Introduction to Collaborative Robotics		x			x	x		78
Internet of Things: Raspberry and Arduino	x	x			x			79
Introduction to Automation Systems	x					x		80
Introduction to Digital Twin Tech		x						81
Introduction to Robotics	x					x		82
Introduction to the Programming of UR Cobots	x					x		83
IoT	x					x		84
IoT sensor development and Iorawan network configuration						x		85
Lean Fundamental Micro-Credential	x							86
LEAN Introduction					x			87
Make 3D slicing settings						x		88
Manufacturing a part using 3D printing (with wire)	x							89
Manufacturing process design	x							90
Manufacturing processes 1	x							91
Manufacturing processes 2	x							92
Manual assembly techniques					x			93
Master in Digital Manufacturing		x				x		94
Method design concept	x					x	x	95
Measurement and control of physical variables	x							96
Operations Management	x							97
Performing a scientific research					x			98
Pneumatics basic training						x		99
Predictive Maintenance	x							100
Problem Solving					x			101
Process Automation with PLC, HMI, and Electro-Pneumatic Systems	x	x						102
Process Optimization via Advanced Analytics & AI	x	x				x		103
Process Simulation Systems, Digital Twin, Product Digital Twin	x	x				x		104
Project closing & Continuous Improvement				x				105
Project initiation and Charter development				x				106
PLM management: 3D Experience	x	x						107
Redesign of parts and assembly using CAD software	x							108
Reverse Engineering with 3D CAD: NX	x	x						109
Reverse Engineering with 3D CAD: Solid Edge	x	x						110
Risk and change management							x	111
Roadmap to Sustainability			x					112
Robot Programming Health and Security		x				x		113
Robotics and kinematics control	x					x		114
Robotics Laboratory	x					x		115
Simatic S7 SCL						x		116
SLS 3D Printing	x							117
Solidworks advanced part modeling						x		118
Statistical Process Control (SPC)		x				x		119
Subtractive manufacturing processes	x							120
Teamwork					x			121
Thinking innovatively					x			122
Towards Open and Generative Organizational Models					x			123
Understanding Environmental and Social Impacts			x					124
Using a Chemical Reactor	x							125
Waste treatment process			x					126
Workplace Organization & Standard Work				x	x	x		127
Writing a program to PLC						x		128
								129



2.2. INDICI SECONDO LE AREE DI TRASFORMAZIONE ADMA

AREA DI TRASFORMAZIONE 1: ADVANCED MANUFACTURING TECHNOLOGIES

TRAINING COURSE	MATURITY LEVEL					Page
	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	
3D Printing and Additive Manufacturing			x			22
3D Scanning - Reverse Engineering				x		23
3D Scan (France)				x		24
3D Scan (Spain)			x			25
3D Verification. M-COSMOS				x		26
3 to 5 axis milling techniques with creo machining					x	27
ABB Robot Start-up				x		29
Additive Manufacturing, 3D Printing				x		30
AR assistive assembly station - Arkite				x		34
Artificial Intelligence Applied to Learning Factories				x		36
Artificial Vision Programming				x		37
CAM 5 Axis				x		42
CAM Basics			x			43
CAM NX (2 1/2 and 3 axis milling machine)					x	44
CAM of subtractive machining processes				x		45
CNC machining from CAM				x		46
CNC machine Operation Basics		x				47
Collaborative Robot				x		49
Component inspection using a coordinate measuring machine				x		50
Design for Additive Manufacturing				x		57
Design of Manufacturing				x		58
Electrical Discharge Machining (EDM)				x		61
Electronic Assembly				x		62
Fanuc industrial robot programming			x			66
Free-form surface modeling				x		67
Functional Safety					x	68
Fundamentals of robotics				x		69



TRAINING COURSE	MATURITY LEVEL					Page
	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	
Industrial communication					x	71
Industrial Robot Programming. Level 1 (ABB, FANUC, KUKA)				x		72
Industrial Robot Programming. Level 2 (ABB, FANUC, KUKA)					x	73
Industry 4.0 & 5.0 communication architecture					x	74
Installation and Maintenance of Industrial Automation Systems				x		75
Installation and maintenance of collaborative robots 'COBOTS'				x		76
Internet of Things: Raspberry and Arduino					x	79
Introduction to Automation Systems					x	80
Introduction to Robotics					x	82
Introduction to the Programming of UR Cobots			x			83
IoT					x	84
Lean Fundamental Micro-Credential				x		86
Manufacturing a part using 3D printing (with wire)				x		89
Manufacturing process design				x		90
Manufacturing processes 1				x		91
Manufacturing processes 2				x		92
Method design concept			x			95
Measurement and control of physical variables			x	x		96
Operations Management				x		97
Predictive Maintenance			x			100
Process Automation with PLC, HMI, and Electro-Pneumatic Systems				x		102
Process Optimization via Advanced Analytics & AI				x		103
Process Simulation Systems, Digital Twin, PLM management: 3D Experience				x		104
Redesign of parts and assembly using CAD software			x			108
Reverse Engineering with 3D CAD: NX				x		109
Reverse Engineering with 3D CAD: Solid Edge				x		110
Robotics and kinematics control					x	111
Robotics Laboratory					x	115
SLS 3D Printing			x			116
Subtractive manufacturing processes				x		118
Using a Chemical Reactor			x			121
						126



AREA DI TRASFORMAZIONE 2: DIGITAL FACTORY

TRAINING COURSE	MATURITY LEVEL					Page
	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	
3D Modeling				x		21
3D Printing and Additive Manufacturing			x			22
3D Scanning - Reverse Engineering				x		23
3D Scan (Spain)			x			25
3D Verification. M-COSMOS				x		26
ABB Robot Start-up				x		29
Additive Manufacturing, 3D Printing				x		30
Advanced Programming (Siemens S7 1500 PLC with TIA Portal)				x		31
AR assistive assembly station - Arkite				x		34
Artificial Intelligence		x				35
Artificial Intelligence Applied to Learning Factories				x		36
Artificial Vision Programming				x		37
Automation and Robotics			x			38
Basic Programming (PLC Siemens S7 1500 with TIA Portal)			x			39
CAM NX (2 1/2 and 3 axis milling machine)					x	44
Collaborative Robot				x		49
Connected Workers			x			51
Cybersecurity			x			53
Cybersecurity in Industry				x		54
Design 4.0				x		56
Digital Operation				x		59
Digital Transformation Pathway			x			60
Electrical Discharge Machining (EDM)				x		61
Electronic Assembly				x		62
Ergonomics in Industry 5.0			x			64
Factory Logistics 4.0				x		65
Fundamentals of robotics				x		69
Human-Centric Technologies & Ergonomic Innovation			x			70
Industrial Robot Programming. Level 1 (ABB, FANUC, KUKA)				x		72
Industrial Robot Programming. Level 2 (ABB, FANUC, KUKA)					x	73
Installation and Maintenance of Industrial Automation Systems				x		75
Installation and maintenance of collaborative robots 'COBOTS'				x		76
Introduction to Collaborative Robotics			x			78
Internet of Things: Raspberry and Arduino					x	79
Introduction to Digital Twin Tech			x			81
Master in Digital Manufacturing				x		94
Process Automation with PLC, HMI, and Electro-Pneumatic Systems				x		102
Process Optimization via Advanced Analytics & AI				x		103
Process Simulation Systems, Digital Twin,				x		104
Product Digital Twin				x		105
PLM management: 3D Experience				x		108
Reverse Engineering with 3D CAD: NX				x		110
Reverse Engineering with 3D CAD: Solid Edge				x		111
Robot Programming Health and Security				x		114
Statistical Process Control (SPC)				x		120



AREA DI TRASFORMAZIONE 3: ECO FACTORY

TRAINING COURSE	MATURITY LEVEL					Page
	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	
CNC Waste Reduction Strategies			x			48
Corporate sustainability basics				x		52
Development of an Environmental Responsibility and Circular Economy Plan					x	55
Introduction to Carbon Footprint				x		77
Roadmap to Sustainability				x		113
Understanding Environmental and Social Impacts			x			125
Waste treatment process			x			127

AREA DI TRASFORMAZIONE 4: END TO END CUSTOMER FOCUSED ENGINEERING

TRAINING COURSE	MATURITY LEVEL					Page
	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	
Applied Computing Project				x		32
Applied Project Management Integration Project				x		33
Artificial Intelligence Applied to Learning Factories				x		36
Artificial Vision Programming				x		37
Design 4.0				x		56
Engineering Project Management				x		63
Industrial Robot Programming. Level 1 (ABB, FANUC, KUKA)				x		72
Industrial Robot Programming. Level 2 (ABB, FANUC, KUKA)					x	73
Project closing & Continuous Improvement				x		106
Project initiation and Charter development				x		107
Workplace Organization & Standard Work			x			128

AREA DI TRASFORMAZIONE 5: HUMAN-CENTRED ORGANIZATION

TRAINING COURSE	MATURITY LEVEL					Page
	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	
5S Workplace Organization			x			28
Connected Workers			x			51
Development of an Environmental Responsibility and Circular Economy Plan					x	55
Ergonomics in Industry 5.0			x			64
Human-Centric Technologies & Ergonomic Innovation			x			70
Introduction to Collaborative Robotics			x			78
Internet of Things: Raspberry and Arduino					x	79
LEAN Introduction			x			87
Manual assembly techniques			x			93
Performing a scientific research				x		98
Problem Solving				x		101
Teamwork					x	122
Thinking innovatively				x		123
Towards Open and Generative Organizational Models			x			124
Workplace Organization & Standard Work			x			128



AREA DI TRASFORMAZIONE 6: SMART MANUFACTURING

TRAINING COURSE	MATURITY LEVEL					Page
	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	
3D Scan (Spain)			x			25
3D Verification. M-COSMOS				x		26
ABB Robot Start-up				x		29
Additive Manufacturing, 3D Printing				x		30
Advanced Programming (Siemens S7 1500 PLC with TIA Portal)				x		31
Artificial Intelligence Applied to Learning Factories				x		36
Artificial Vision Programming				x		37
Basic Programming (PLC Siemens S7 1500 with TIA Portal)			x			39
Basics of Automation with PLC					x	40
Blockchain Technology and platforms for industry				x		41
CAM NX (2 1/2 and 3 axis milling machine)					x	44
Collaborative Robot				x		49
Connected Workers			x			51
Design 4.0				x		56
Digital Operation				x		59
Digital Transformation Pathway			x			60
Ergonomics in Industry 5.0			x			64
Factory Logistics 4.0				x		65
Functional Safety					x	68
Human-Centric Technologies & Ergonomic Innovation			x			70
Industrial communication					x	71
Industrial Robot Programming. Level 1 (ABB, FANUC, KUKA)				x		72
Industrial Robot Programming. Level 2 (ABB, FANUC, KUKA)					x	73
Industry 4.0 & 5.0 communication architecture					x	74
Introduction to Collaborative Robotics			x			78
Introduction to Automation Systems					x	80
Introduction to Robotics					x	82
Introduction to the Programming of UR Cobots			x			83
IoT					x	84
IoT sensor development and lorawan network configuration				x		85
Make 3D slicing settings				x		88
Master in Digital Manufacturing				x		94
Method design concept			x			95
Pneumatics basic training		x				99
Process Optimization via Advanced Analytics & AI				x		103
Process Simulation Systems, Digital Twin,				x		104
Product Digital Twin				x		105
Robot Programming Health and Security				x		114
Robotics and kinematics control					x	115
Robotics Laboratory					x	116
Simatic S7 SCL				x		117
Solidworks advanced part modeling				x		119
Statistical Process Control (SPC)				x		120
Workplace Organization & Standard Work			x			128
Writing a program to PLC				x		129



AREA DI TRASFORMAZIONE 7: VALUE CHAIN ORIENTED OPEN FACTORY

TRAINING COURSE	MATURITY LEVEL					Page
	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	
Factory Logistics 4.0				x		65
Method design concept			x			95
Risk and change management					x	112



3. CORSI PER LE PMI



3D MODELLING

ADMA TRANSFORMATION AREA

This course introduces the principles and techniques of 3D modelling for design, prototyping, animation, and production using industry-standard CAD and modelling software.

<https://www.oba.gov.tr/egitim/detay/blender-ile-3-boyutlu-modelleme-egitimi-kursu-682>

DIGITAL FACTORY

3D MODELLING

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
3D modelling	3D modelling	4

GENERAL INFORMATION

Course provider	GEBKIM VET
Country	Türkiye
Language	Turkish
Education Subject	This course introduces the principles and techniques of 3D modelling for design, prototyping, animation, and production using industry-standard CAD and modelling software.
Learner Profile	VET Students
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF 4
Teaching Methodology	Theoretical / Practical
Learning Environment	VET Centre

INFORMATION ABOUT THE COURSE

Workload / Duration	30 Hours
Location	GEBKIM VET
Learning activities	Lectures, PBL, Team Based Mini Projects
Assessment Type	Continuous evaluation through practical assignments, Technical file submissions (model files, STL, documentation)
Entry requirement	Interest in design, production, animation, or engineering
Admission procedure	Online or in-person application submission

ADMA TRANSFORMATION AREA

This training aims to introduce students to additive manufacturing in Industry 4.0.

For this purpose, a theoretical introduction is provided to two of the most widely used 3D printing technologies for polymeric materials in today's industry, FDM and SLS technologies. The theoretical introduction is also complemented by practical 3D printing with the two technologies mentioned above.

<https://www.fpsanturtzilh.eus/inicio/estudios/cursos-de-especializacion/fabricacion-aditiva/>

Advanced Manufacturing
Technologies; Digital Factory

3D printing; additive
manufacturing

CURRENT MATURITY
LEVEL (1-5)

2



TARGET MATURITY
LEVEL (1-5)

3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
3D printing process	http://data.europa.eu/esco/skill/2afb2b59-c9a3-4cf3-b1dd-1a2fad51e583	2
Technical terminology	http://data.europa.eu/esco/skill/d8567009-7c6f-43fb-82fb-7154ed8ebca9	3
3D modelling	http://data.europa.eu/esco/skill/97965983-0da4-4902-9daf-d5cd2693ef73	3
Maintain additive manufacturing systems	http://data.europa.eu/esco/skill/3a699f1e-3803-4c1b-b6a8-6230cca92933	2

GENERAL INFORMATION

Course provider	Santurtzi LHII
Country	Spain
Language	Spanish
Education Subject	3D printing and additive manufacturing
Learner Profile	Students
Mode of Learning	In Person
EQF Level	4 and 5
Teaching Methodology	Theoretical and Practical
Learning Environment	3D Lab, Google Suite

INFORMATION ABOUT THE COURSE

Workload / Duration	60 Hours
Location	Santurtzi LHII
Learning activities	Basic knowledge of 3D printing FDM technology, materials and special features components of a 3d printer fdm. printing profiles in fdm. errores comunes en impresión fdm common mistakes in fdm printing main components of a sls printer sls printing workflow
Entry requirement	English adequate level Maturity. Responsibility at personal work Ability to work as part of a team Good level of computer user skills
Admission procedure	Curriculum and personal interview

3D Scanning – Reverse Engineering

This course delves into the process of 3D digitization and reverse engineering, focusing on converting physical parts into digital models. Participants will learn how to digitize components by scanning them and transforming the resulting faceted body (STL) files into usable 3D models, whether in a solid or surface environment.

<https://www.hernanilanh.eus/>

ADMA TRANSFORMATION AREA

Advanced Manufacturing
Technologies, Digital Factory

Reverse engineering, designing,
scanning

CURRENT
MATURITY (1-5)
LEVEL: 3



TARGET
MATURITY
LEVEL (1-5): 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Use 3D scanning techniques	https://esco.ec.europa.eu/en/skill/6b878b85-f321-4a14-92e1-34466d787b68	4
Perform reverse engineering	https://esco.ec.europa.eu/en/skill/f2e0e8f6-3566-46fc-aaf2-9ec116d62724	4
Create 3D models	https://esco.ec.europa.eu/en/skill/15216e6f-2f7c-4411-abe7-90cc2730c4ce	4
Use computer-aided design (CAD) software	https://esco.ec.europa.eu/en/skill/45a4f4e3-0e48-4df9-97d7-ec2d8bc7de8e	4

GENERAL INFORMATION

Course provider	Hernani LH
Country	Basque Country/ Spain
Language	Spanish
Learner Profile	People who are looking to acquire or deepen skills in 3D digitization, reverse engineering processes, and related technologies such as Product Designers, Additive Manufacturing professionals and Quality Control specialists.
Mode of Learning	In Person
Credential Type	Microcredential Course
EQF Level	EQF 5
Teaching Methodology	Theoretical / Practical / Practical in CLF

INFORMATION ABOUT THE COURSE

Start Date – End Date	14/10/2024 - 24/10/2024
Workload / Duration	24 hours
Price	Free
Location	Hernani, Basque Country

3D Scan

ADMA TRANSFORMATION AREA

Scanning a part and reconstructing a digital model of it to enable further design, analysis, or manufacturing processes.

<https://community.lcamp.eu/catalog-item/3d-scan/>

Advanced Manufacturing
Technologies

3D scanning, reverse engineering,
CAD modeling, digital model
creation.

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Reverse engineering	http://data.europa.eu/esco/skill/8fdf4273-d8ce-47a2-b461-45cb1282ef36	3
Use CAD software	http://data.europa.eu/esco/skill/b34e2ba1-9080-48c9-9b42-ee9192a4d3f1	3
Manage data	http://data.europa.eu/esco/skill/9ff9db9d-d14b-426e-83f3-e7449af6c79f	2
Industrial design	http://data.europa.eu/esco/skill/efacdaad-ab73-4056-bee3-4eb34b458bf6	3

GENERAL INFORMATION

Course provider	Lycée La Découverte
Country	France
Language	French
Education Subject	3D Scanning and Reverse Engineering
Learner Profile	EQF 5 students
Mode of Learning	Online / Hybrid / In Person
Credential Type	ECTS
EQF Level	EQF 5
Teaching Methodology	Theoretical & Practical
Learning Environment	VET centre

INFORMATION ABOUT THE COURSE

Start Date – End Date	2025-01-28 2025-01-29
Workload / Duration	8 Hours
Location	Lycée La Découverte Decazeville France
Learning activities	Theoretical course, project and practical work
Entry requirement	EQF4 diploma
Admission procedure	Registration - Parcoursup

3D SCAN

ADMA TRANSFORMATION AREA

This course provides participants with essential knowledge of different 3D scanning techniques. Learners will acquire practical skills to generate 3D mesh models from real objects and will learn how to edit and repair scanned meshes for further use in digital processes.

Advanced Manufacturing technologies, Digital Factory, Smart Manufacturing

3D Scanning, Mesh Editing

CURRENT MATURITY
LEVEL (1-5)

2



TARGET MATURITY
LEVEL (1-5)

3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
3D body scanning technologies	http://data.europa.eu/esco/skill/9bc3b9ae-50d8-4a32-857e-8cf8d9b4ba8e	2
create 3D environments	http://data.europa.eu/esco/skill/0620ecd1-e4b1-4dfa-972b-38a93e5ebd9d	2

GENERAL INFORMATION

Course provider	IMH Campus
Country	Spain
Language	English / Spanish
Education Subject	Contents: Types of scanning, Preparation of the environment and part for scanning, Scanning with Kinect, Scanning with EinScan using fixed table, Handheld scanning with EinScan, Mesh editing and repair, Practical exercises
Mode of Learning	In Person
Teaching Methodology	Theoretical / Practical / Practical in CLF

INFORMATION ABOUT THE COURSE

Workload / Duration	15 Hours
Location	IMH Campus

3D VERIFICATION. M-COSMOS

ADMA TRANSFORMATION AREA

This course is designed to equip participants with essential skills for accurately measuring and verifying the dimensional integrity of manufactured parts using advanced Coordinate Measuring Machines (CMM).

<https://community.lcamp.eu/catalog-item/three-dimensional-verification-m-cosmos/>

Advanced Manufacturing technologies, Digital Factory, Smart Manufacturing

Metrology Software

CURRENT MATURITY
LEVEL (1-5)

3



TARGET MATURITY
LEVEL (1-5)

4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Operate precision measuring equipment	http://data.europa.eu/esco/skill/42c25baf-ccb3-47d9-a872-bb2ceb615538	3
Verify product specifications	http://data.europa.eu/esco/skill/6ab7c99f-a430-419c-a881-8ef945230e4d	2
Calibrate engines	http://data.europa.eu/esco/skill/0ae61df3-c50a-459d-a912-b5423bfb1a5a	4

GENERAL INFORMATION

Course provider	Miguel Altuna LH
Country	Spain
Language	Basque
Learner Profile	Quality control technician, metrology engineer, or manufacturing technician with basic knowledge of metrology, seeking to enhance their skills in 3D verification using CMM equipment.
Mode of Learning	In Person
Credential Type	Microcredential Course
EQF Level	EQF 5
Teaching Methodology	Theoretical / Practical

INFORMATION ABOUT THE COURSE

Workload / Duration	30 Hours
Location	Miguel Altuna LH

3 TO 5-AXIS MILLING TECHNIQUES WITH CREO MACHINING

This course is designed for anyone who wants to learn how to use Creo for milling and drilling in toolmaking, mechanical engineering, and related fields. You will learn how to configure the Creo environment for successful milling operations.

<https://ti.audax.si/tecaji/tehnike-3-do-5-osnega-frezanja-s-creo-machining-98?prijava=1&idtecaji=98&idtermin=16041>

ADMA TRANSFORMATION AREA

Advance manufacturing technologies

CNC Milling, Creo Parametric, 3-axis, 4-axis, 5-axis

CURRENT
MATURITY
LEVEL 4



TARGET
MATURITY
LEVEL 5

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Use computer-aided design software (CAD)	http://data.europa.eu/esco/skill/b34e2ba1-9080-48c9-9b42-ee9192a4d3f1	4
Technical drawings	http://data.europa.eu/esco/skill/59ea80e1-463a-4dba-82c6-d0b6d577d532	3

GENERAL INFORMATION

Course provider	Audax d. O. O.
Country	Slovenia
Language	Slovenian
Education Subject	Defining raw material and cutting tools, creating milling sequences, drilling cycles
Learner Profile	adult
Mode of Learning	In Person
Credential Type	Certificat
EQF Level	EQF 5
Teaching Methodology	Practical training, solution solving
Learning Environment	Educational lab

INFORMATION ABOUT THE COURSE

Start Date – End Date	16/09/2025 – 20/09/2025
Workload / Duration	4 days
Schedule information	4 days training
Location	Ljubljana
Learning activities	Creating and configuration, practical training
Assessment Type	Practical test
Entry requirement	Recommended Prerequisites: Completion of the <i>Creo Parametric Basics</i> course and at least 200 hours of hands-on practice with Creo software."

5S Workplace Organization

ADMA TRANSFORMATION AREA

This training provides knowledge and hands on training in structure the workplace for efficiency and security, all within the scope of 5S.

<https://community.lcamp.eu/catalog-item/production-philosophy/>

Human Centred Organisation

5S, LEAN, TPS, Production Philosophy

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Continuous Improvement Philosophies	http://data.europa.eu/esco/skill/0550431f-9c8b-4204-9c45-59bc5feacf06	3
Lean project manager	http://data.europa.eu/esco/skill/da6393d5-a53c-4863-abc7-51f36281d74e	2

GENERAL INFORMATION

Course provider	Curt Nicolin Gymnasiet
Country	Sweden
Language	Swedish
Education Subject	Production Philosophy
Learner Profile	EQF 5
Mode of Learning	In Person
Credential Type	Certificate of Completion
EQF Level	EQF 5
Teaching Methodology	Theoretical, Practical, Problem solving
Learning Environment	Classroom, Workshop

INFORMATION ABOUT THE COURSE

Start Date – End Date	According to agreement
Workload / Duration	4 days
Schedule information	4 days training
Location	Finspång Sweden
Learning activities	Theoretical and practical training
Assessment Type	Theoretical and practical test
Entry requirement	Technical studies or similar completed EQF 4
Admission procedure	https://www.cng.se/

ABB Robot Start-up

ADMA TRANSFORMATION AREA

Technicians will get knowledge starting-up a robot cell. The technician is being self-sufficient. Achieve knowledge starting up robot units: ABB robot

<https://www.imh.eus/en>

Advanced Manufacturing Technologies, Digital Factory, Smart Manufacturing Engineering

Robotics, ABB, automation

CURRENT
MATURITY (1-5)
LEVEL: 3



TARGET
MATURITY
LEVEL (1-5): 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Install industrial robots	https://esco.ec.europa.eu/en/skill/f4a2eb3a-e7d6-44da-b84f-4e9e0e360f19	3
Commission industrial robots	https://esco.ec.europa.eu/en/skill/b275f6ec-3f94-42c8-9941-3272a3a33250	4
Program industrial robots	https://esco.ec.europa.eu/en/skill/5bd8b06f-3d47-4a55-bf17-77321ae5f294	4
Perform robot cell testing	https://esco.ec.europa.eu/en/skill/337d1928-03d5-4baf-8b71-c92df4b512b1	3

GENERAL INFORMATION

Course provider	IMH CAMPUS
Country	Basque Country/ Spain
Language	Spanish
Mode of Learning	In-Person
Credential Type	Microcredential Course
EQF Level	4
Teaching Methodology	Theoretical / Practical

INFORMATION ABOUT THE COURSE

Workload / Duration	8 hours
Location	Elgoibar, Basque Country

Additive manufacturing, 3D Printing

The aim of this training is to provide information on the different existing additive manufacturing technologies and their main uses.

It also provides training for printing parts on FDM (Fused Deposition Modeling) printers. Aimed at both individuals and companies who want to get started in the world of additive manufacturing as well as users with basic knowledge of FDM who want to deepen their knowledge.

<https://www.imh.eus/en>

ADMA TRANSFORMATION AREA

Advanced Manufacturing Technologies, Digital Factory, Smart Manufacturing Engineering

3D printing, additive manufacturing

CURRENT
MATURITY (1-5)
LEVEL: 3



TARGET
MATURITY
LEVEL (1-5): 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Apply additive manufacturing technologies	https://esco.ec.europa.eu/en/skill/7d196022-d931-4cd9-b7c3-2b2a3cfcc9e9	3
Operate 3D printers	https://esco.ec.europa.eu/en/skill/33af5dd7-22b6-41a0-844f-5e0cb19a5ae7	4
Select additive manufacturing processes	https://esco.ec.europa.eu/en/skill/7bcb02fc-4477-4a9a-b5c0-7d3eb9c56d89	4

GENERAL INFORMATION

Course provider	IMH CAMPUS
Country	Basque Country/ Spain
Language	Spanish
Mode of Learning	In-Person
Credential Type	Microcredential Course
EQF Level	4
Teaching Methodology	Theoretical / Practical

INFORMATION ABOUT THE COURSE

Workload / Duration	20 hours
Location	Elgoibar, Basque Country

The world of industrial automation is constantly evolving, and staying up to date with the latest technologies and techniques is essential for any professional in the field.

The advanced course on SIMATIC S7-1500 | TIA Portal (Level II) is your gateway to becoming an expert in Siemens PLC programming and its integration with TIA Portal.

This course is designed to provide you with a hands-on and enriching learning experience, enabling you to master the skills necessary to operate and program the Siemens SIMATIC S7-1500 programmable logic controller.

<https://www.lhusurbil.eus/web/Default.aspx?lng=EU>

ADMA TRANSFORMATION AREA

Digital Factory, Smart Manufacturing

Robotics, programming, automation

CURRENT
MATURITY (1-5):
3



TARGET
MATURITY
LEVEL (1-5): 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Program programmable logic controllers (PLCs)	https://esco.ec.europa.eu/en/skill/1f407276-34e6-4e45-a861-1d3bb3cfc40	4
Use industrial automation software	https://esco.ec.europa.eu/en/skill/693964d2-64a4-4d8a-bcb9-f5f20c02e2fd	4
Operate programmable logic controllers (PLCs)	https://esco.ec.europa.eu/en/skill/07d9e442-bc5d-4635-8232-fdb80d9d11f0	4
Perform industrial automation	https://esco.ec.europa.eu/en/skill/8586e6f7-4e9f-47c4-bfef-91f70e0933	4
Configure programmable logic controllers	https://esco.ec.europa.eu/en/skill/05eeb62c-2fd1-4bd1-8a91-fd8b4cfa1e4f	4

GENERAL INFORMATION

Course provider	CIFP Usurbil LHII
Country	Basque Country/ Spain
Language	Spanish
Learner Profile	This course is designed for industrial automation professionals, technicians, unemployed individuals, and workers with prior experience in PLC programming who seek advanced skills in Siemens SIMATIC S7-1500 and TIA Portal integration
Mode of Learning	In Person
Credential Type	Microcredential Course
EQF Level	EQF 4
Teaching Methodology	Theoretical / Practical / Practical in CLF

INFORMATION ABOUT THE COURSE

Workload / Duration	35 hours
Price	Free
Location	Usurbil, Basque Country

ICS-199 Applied Computing Project

ADMA TRANSFORMATION AREA

In a collaborative environment, learn the process of defining, designing, developing, and implement simple yet impactful web application. Small teams leverage collaboration and version control tools while navigating the challenges of project management. This course emphasizes continuous web integration and thorough technical documentation.

[ICS 199 - Applied Computing Project - Modern Campus Catalog™](#)

END-TO-END CUSTOMER-
FOCUSED ENGINEERING

Application Development

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Computer Science	http://data.europa.eu/esco/skill/7b5cce4d-c7fe-4119-b48f-70aa05391787	4
Web Programming	http://data.europa.eu/esco/skill/69bbd53f-fbb0-4476-b4b2-ef7844464e28	4
Project Management	http://data.europa.eu/esco/skill/7111b95d-0ce3-441a-9d92-4c75d05c4388	4

GENERAL INFORMATION

Course provider	Camosun College
Country	Canada
Language	English
Education Subject	Information and Computer Systems Technology
Learner Profile	College Students
Mode of Learning	Online
Credential Type	Micro-Credential
EQF Level	4
Teaching Methodology	Practical
Learning Environment	In Classroom

INFORMATION ABOUT THE COURSE

Start Date – End Date	Four-month term
Workload / Duration	175 Hours
Price	\$ 1,124.76 CAD
Location	Camosun College
Learning activities	Lectures, labs, and group work
Assessment Type	Group work and project development
Entry requirement	Prerequisite college courses
Admission procedure	Apply via Information and Computer Systems degree program

APMC 505V – Applied Project Management Integration Project

ADMA TRANSFORMATION AREA

END-TO-END CUSTOMER-
FOCUSED ENGINEERING

APPLIED PROJECT MANAGEMENT

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

This is the capstone course in the Applied Project Management Certificate program. It is a comprehensive evaluation of the skills and knowledge developed throughout the first 5 courses in the program. You will be evaluated in two ways, with an integration project and a knowledge exam. Those successful in passing both components for a combined grade of C or better will be granted their certificate.

[APMC 505V Applied Project Management Integration Project](#)

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
S4.1 – Developing objectives and strategies	management skills	4
S4.2 – Organising, planning, and scheduling work and activities	management skills	4
S4.4 – performing administrative actions	management skills	4
S4.9 – making decisions	management skills	4

GENERAL INFORMATION

Course provider	Camosun College / ProSIT
Country	Canada
Language	English
Education Subject	Business
Learner Profile	College Students
Mode of Learning	Online
Credential Type	College Certificate
EQF Level	4
Teaching Methodology	Theoretical
Learning Environment	Online

INFORMATION ABOUT THE COURSE

Start Date – End Date	Self-Paced
Workload / Duration	Self-Paced
Price	\$969.00 CAD
Location	Camosun College
Learning activities	Lectures and analysis
Assessment Type	Exams
Entry requirement	Must be enrolled in Applied Project Management Certificate program
Admission procedure	Enroll as part of program above

AR assistive assembly station - Arkite

ADMA TRANSFORMATION AREA

Advanced Manufacturing
Technologies, Digital Factory

Robot, AR, mechatronics,
assembly

CURRENT
MATURITY (1-5)
LEVEL: 3



TARGET
MATURITY
LEVEL (1-5): 4

This course explores the use of Augmented Reality (AR) in smart manufacturing through the Arkite platform. Participants will learn to program step-by-step assembly instructions and apply Lean principles by working on the assembly of the LCAMP robot. The course emphasizes error reduction, process guidance, and increased efficiency on the shop floor.

<https://www.maltuna.eus/en/>

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Apply lean manufacturing principles	https://esco.ec.europa.eu/en/skill/f36c7b39-2c01-4f28-9e9a-3a8bc8ecbfa6	4
Assemble components	https://esco.ec.europa.eu/en/skill/4c680d8d-36f6-49fd-a23f-e36e4e032162	4
Use augmented reality software	https://esco.ec.europa.eu/en/skill/4a37f3a3-bbb1-4ff0-9472-7ce4ebf5ff07	4
Program machine operations	https://esco.ec.europa.eu/en/skill/bb0b759e-ff60-4696-a146-b5c74c73f8bc	3
Follow safety procedures in industrial contexts	https://esco.ec.europa.eu/en/skill/7f9e180e-800d-4e2d-8eb9-265d487edb9d	4

GENERAL INFORMATION

Course provider	Miguel Altuna LHII
Country	Basque Country, Spain
Language	English
Education Subject	Industrial Automation and Robotics, Production Programming in Mechanical Manufacturing, Industrial mechatronics
Learner Profile	Students EQF5, Workers
Mode of Learning	Online / Hybrid / In Person: In person
EQF Level	EQF5
Teaching Methodology	Theoretical / Practical / Practical in CLF: Practical in CLF

INFORMATION ABOUT THE COURSE

Workload / Duration	ECTS / Hours / Days / Weeks: 10 hours
Price	0€
Location	Bergara, Miguel Altuna LHII
Assessment Type	Project
Entry requirement	EQF5 level

Artificial Intelligence

ADMA TRANSFORMATION AREA

This course introduces learners to the fundamentals of Artificial Intelligence (AI) and its applications in modern technology and industry. It explores key concepts such as machine learning, data processing, and intelligent decision-making systems. Learners will understand how AI models are developed and used to solve real-world problems, automate processes, and support innovation across sectors.

<https://3tindustry40training.eu/course/view.php?id=10>

Digital Factory

IT, Artificial Intelligence

CURRENT
MATURITY
LEVEL 1



TARGET
MATURITY
LEVEL 2

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Manage IT security compliances	http://data.europa.eu/esco/skill/06358891-8424-43c5-891e-d40f226bef40	1
Use IT tools	http://data.europa.eu/esco/skill/f632251a-4078-4546-b19f-7ef528d08325	2
Principles of Artificial Intelligence	http://data.europa.eu/esco/skill/e465a154-93f7-4973-9ce1-31659fe16dd2	2

GENERAL INFORMATION

Course provider	3TIndustry 4.0
Country	France, Spain and Germany
Language	English
Education Subject	Artificial Intelligence , IT
Mode of Learning	Online
Credential Type	None
EQF Level	Not applicable
Teaching Methodology	Theoretical
Learning Environment	E Learning

INFORMATION ABOUT THE COURSE

Start Date – End Date	Not applicable
Workload / Duration	3 Hours
Price	Free
Location	Online
Learning activities	Theoretical
Assessment Type	Quiz
Entry requirement	None
Admission procedure	Registration to the platform

ARTIFICIAL INTELLIGENCE APPLIED TO LEARNING FACTORY

ADMA TRANSFORMATION AREA

This course provides a practical introduction to Artificial Intelligence (AI) and Machine Learning applied to Learning Factory environments. The fundamentals of Machine Learning, data preprocessing, supervised and unsupervised learning techniques will be addressed. Through practical examples, participants will learn how to implement AI models.

Advanced Manufacturing Technologies;
Digital Factory; Smart Manufacturing;
End-to-end Customer Focused

Artificial Intelligence – Machine
Learning

CURRENT MATURITY
LEVEL (1-5)

3



TARGET MATURITY
LEVEL (1-5)

4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Principles of artificial intelligence	http://data.europa.eu/esco/skill/e465a154-93f7-4973-9ce1-31659fe16dd2	3
Machine Learning	http://data.europa.eu/esco/skill/3a2d5b45-56e4-4f5a-a55a-4a4a65afdc43	3
Predictive maintenance	http://data.europa.eu/esco/skill/7d913551-e17a-40ba-baf7-48d0c3b12e50	2
Analyse production processes for improvement	http://data.europa.eu/esco/skill/f1b5800e-b763-4740-9586-3fef30568e81	2

GENERAL INFORMATION

Course provider	FP Santurtzi LH
Country	Basque Country - Spain
Language	Spanish
Education Subject	Artificial Intelligence (AI). Machine Learning
Learner Profile	Professionals looking to implement AI solutions in manufacturing, automation and quality control processes.
Mode of Learning	Online
EQF Level	4
Teaching Methodology	Theoretical / Practical
Learning Environment	Moodle

INFORMATION ABOUT THE COURSE

Workload / Duration	40 Hours – 4 Weeks
Learning activities	TU1. Understand the fundamental principles of Machine Learning and its application in industrial environments. TU2. Preprocess and analyze data for decision making. TU3. Apply supervised learning techniques. TU4. Implement unsupervised learning models for pattern detection.
Entry requirement	English adequate level Maturity Responsibility at personal work Ability to work as part of a team Good level of computer user skills
Admission procedure	Curriculum + personal interview

Artificial Vision Programming

ADMA TRANSFORMATION AREA

Apply Artificial Vision system to improve the automation. The objectives of the course are: Know the structure of an artificial vision system, learn how to create the machine vision program, learn how to run the program on a physical station.

Advanced Manufacturing Technologies;
Digital Factory; Smart Manufacturing;
End-to-end Customer Focused

Programming, artificial, vision,
automation

CURRENT MATURITY
LEVEL (1-5)

3

TARGET MATURITY
LEVEL (1-5)

4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Algorithms	http://data.europa.eu/esco/skill/54924a2c-daca-40d3-9716-4b38ceb04f38	2
Industrial software	http://data.europa.eu/esco/skill/41ec47dd-08b3-464a-9c45-c706f3e74467	2
Use automatic programming	http://data.europa.eu/esco/skill/7d10fcb2-b368-48ab-996b-7c9fafcf68ed	2
Integrate system components	http://data.europa.eu/esco/skill/ed8de897-adbe-4f0e-b4d2-534953e64c72	2
Software and applications development and analysis	http://data.europa.eu/esco/skill/ed8de897-adbe-4f0e-b4d2-534953e64c72	2

GENERAL INFORMATION

Course provider	IMH CAMPUS
Country	Basque Country / Spain
Language	English / Spanish
Education Subject	Participants will have access to the Sherlock7 machine vision software license during the course, for the development of the following points: - Types of lighting, lenses and cameras. - Image capture with different shooting methods. - Image processing. Preprocessing. - Image analysis and pattern search. - Calibration of the images and taking measurements. - Execution of the program in real time.
Mode of Learning	In Person

INFORMATION ABOUT THE COURSE

Start Date – End Date	To define
Workload / Duration	12 Hours
Location	IMH CAMPUS (Elgoibar)
Entry requirement	No requirements. It is required a computer with an internet connection and an email address.

Aimed at those who work in and/or manage production lines that have inspection systems using artificial vision cameras.

Automation and Robotics – Siemens PLC, TIA Portal

ADMA TRANSFORMATION AREA

You'll learn the fundamental principles of PLC operation, master the basics of programming in the TIA Portal environment, and gain practical experience with actual Siemens devices during this training. The course is designed for beginners and anyone looking to refresh their knowledge, so no prior experience is required. You'll take your first steps toward understanding automated systems in a pleasant and supportive environment.

<https://src-edih.rc-nm.si/izobrazevanje/avtomatizacija-in-robotika-siemens-plc-tia-portal/>

Digital factory

Siemens, PLC, TIA Portal,
automatization

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Industrial software	http://data.europa.eu/esco/skill/41ec47dd-08b3-464a-9c45-c706f3e74467	2

GENERAL INFORMATION

Course provider	Razvojni center Novo mesto d.o.o.
Country	Slovenia
Language	Slovenian
Education Subject	Automation and Robotics
Learner Profile	Adult, employees
Mode of Learning	In Person
Credential Type	Paper based
EQF Level	EQF 4
Teaching Methodology	Theoretical / Practical
Learning Environment	Educational lab

INFORMATION ABOUT THE COURSE

Start Date – End Date	16/09/2025
Workload / Duration	4 hours
Schedule information	9.00-12.00
Price	2000 (full price for companies)
Location	Podbreznik 15, 8000 Novo mesto
Learning activities	Practical exercise, problem solving
Assessment Type	Practical task
Entry requirement	Basic knowledge of Electrical Engineering

Basic Programming (PLC Siemens S7 1500 with TIA Portal)

The world of industrial automation is constantly evolving, and keeping up with the latest technology and techniques is essential for any professional in the field.

The SIMATIC S7-1500 is one of the most widely used PLCs in Industry 4.0 thanks to its performance, flexibility and networking capabilities.

Knowing this system will open doors to numerous opportunities in the field of industrial automation.

In addition, knowledge of TIA Portal, a user interface designed for intuitive operation of all SIMATIC applications and controllers, will enable you to work more efficiently and effectively.

<https://www.lhusurbil.eus/web/Default.aspx?lng=EU>

ADMA TRANSFORMATION AREA

Digital Factory, Smart Manufacturing

Robotics, programming, automation

CURRENT
MATURITY (1-5)
LEVEL: 2



TARGET
MATURITY
LEVEL (1-5): 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Program programmable logic controllers (PLCs)	https://esco.ec.europa.eu/en/skill/1f407276-34e6-4e45-a861-1d3bb3cfc40	3
Use industrial automation software	https://esco.ec.europa.eu/en/skill/693964d2-64a4-4d8a-bcb9-f5f20c02e2fd	3
Operate programmable logic controllers (PLCs)	https://esco.ec.europa.eu/en/skill/07d9e442-bc5d-4635-8232-fdb80d9d11f0	3
Perform industrial automation	https://esco.ec.europa.eu/en/skill/8586e6f7-4e9f-47c4-bfef-91f70eec0933	3
Configure programmable logic controllers	https://esco.ec.europa.eu/en/skill/05eeb62c-2fd1-4bd1-8a91-fd8b4cfa1e4f	3

GENERAL INFORMATION

Course provider	CIFP Usurbil LHII
Country	Basque Country/ Spain
Language	Spanish
Learner Profile	Unemployed individuals, Industrial automation technicians, mechatronics professionals seeking to acquire foundational skills in PLC programming and automation using Siemens S7 1500 and TIA Portal.
Mode of Learning	In Person
Credential Type	Microcredential Course
EQF Level	EQF 5
Teaching Methodology	Theoretical / Practical / Practical in CLF

INFORMATION ABOUT THE COURSE

Workload / Duration	30 hours
Price	Free
Location	Usurbil, Basque Country

BASICS OF AUTOMATION WITH PLC

ADMA TRANSFORMATION AREA

Provide participants with knowledge about configuration of PLC automation and programming hardware, advantages of using PLC in process automation, optimal selection of PLC and extension modules for automation of a specific process, the basic functions of PLC programming, PLC programming on the example of a practical task (basic combination and stepper control).

https://www.tscmb.si/wp-content/uploads/2023/04/OSNOVE_AVTOMATIZACIJE_s_PLK.pdf

Smart Manufacturing

Automation, Programming, PLC, Process Control, Industry 4.0

CURRENT
MATURITY
LEVEL 4



TARGET
MATURITY
LEVEL 5

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Programmable logic controller	http://data.europa.eu/esco/skill/6468e5fb-f3be-4025-87be-4b6556755c61	2
Operate automated process control	http://data.europa.eu/esco/skill/0a0532c2-ee60-4410-8e07-70e4d69370ec	4
Set up automotive robot	http://data.europa.eu/esco/skill/e975b791-b488-4935-be44-06f2f9a443bb	4

GENERAL INFORMATION

Course provider	TŠC Maribor
Country	Slovenia
Language	Slovenian
Education Subject	PLC (Programmable logic controller)
Learner Profile	students, workers
Mode of Learning	In Person
Credential Type	Paper based
EQF Level	5
Teaching Methodology	Theoretical / Practical
Learning Environment	School laboratory

INFORMATION ABOUT THE COURSE

Start Date – End Date	24/02/2025 – 03/03/2025
Workload / Duration	4h/day (24 hours total)
Schedule information	https://www.tscmb.si/wp-content/uploads/2025/01/VABILO_USPOSABLJANJE_avomatizacija_POMLAD_2025.pdf
Price	400,00 EUR + VAT
Location	Zolajeva ulica 12, 2000 Maribor, Slovenia
Learning activities	Lecture, exercise, discussion, laboratory work
Assessment Type	Project or problem-based learning – test practical problem-solving skills
Entry requirement	Professionals, engineers and development technologists who are engaged in process automation and want to improve their competencies in the field of application of PLC in process automation, and persons who want to raise their knowledge for personal development and improve their competitiveness in the labour market.
Admission procedure	https://www.tscmb.si/wp-content/uploads/2023/03/PRIJAVNICA_za_institucionalna-usposabljanja-1.pdf

BLOCKCHAIN TECHNOLOGY AND PLATFORMS FOR INDUSTRY

ADMA TRANSFORMATION AREA

You will learn the key advantages as well as the critical performance, security, and cost limitations of blockchain solutions in the IoT domain. Participants will become familiar with ecosystems for developing and deploying decentralized applications and gain the ability to realistically assess opportunities and select the appropriate approach for implementing blockchain-based IoT solutions in their field.

<https://ict-academy.si/usposabljanje/osnove-tehnologije-blokovnih-verig-in-platform-za-industrijo/>

Smart manufacturing

Distributed Ledger Technology (DLT),
Blockchain, IoT, Decentralized Applications

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Internet of Things	http://data.europa.eu/esco/skill/f049d050-12da-4e40-813a-2b5eb6df6b51	4
Blockchain platforms	http://data.europa.eu/esco/skill/9035afc4-5317-455d-ab60-f32e2ecc6bfc	4

GENERAL INFORMATION

Course provider	University of Ljubljana Faculty of electrical engineering
Country	Slovenia
Language	Slovenian
Education Subject	This educational subject explores the expectations versus reality of blockchain's role in IoT, covering its use as a backend system, device authentication, and decentralized industrial applications. It also examines blockchain network architectures, performance optimization, IoT-integrated solution designs, and security frameworks—including smart contracts—for industrial use cases.
Learner Profile	Adult
Mode of Learning	In Person
Credential Type	Paper based
EQF Level	EQF 5, 6
Teaching Methodology	Theoretical / Practical / Practical in CLF

INFORMATION ABOUT THE COURSE

Start Date – End Date	On demand
Workload / Duration	8 hours
Price	400,00 EUR + VAT
Location	Ljubljana
Learning activities	Practical exercise, training, problem solving
Assessment Type	Practical test
Entry requirement	Advance knowledge in IT

CAM 5-Axis

ADMA TRANSFORMATION AREA

This training is an introduction to 5-Axis milling from CAM using Siemens NX. Taking this training, good knowledge in Siemens NX should already exist.

<https://community.lcamp.eu/catalog-item/cad-specialization/>

Advanced Manufacturing Technologies

CAM, Siemens NX, CNC

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
CAM Software	http://data.europa.eu/esco/skill/27065048-bca8-4b0a-891a-b192b9ceadfd	3
Program a CNC controller	http://data.europa.eu/esco/skill/bf942c60-8539-4951-83ee-63f770da1cb8	3

GENERAL INFORMATION

Course provider	Curt Nicolin Gymnasiet
Country	Sweden
Language	Swedish
Education Subject	CAD-Specialization
Learner Profile	EQF 5
Mode of Learning	In Person
Credential Type	Certificate of Completion
EQF Level	EQF 5
Teaching Methodology	Theoretical, Practical, Problem solving
Learning Environment	Classroom, Workshop

INFORMATION ABOUT THE COURSE

Start Date – End Date	According to agreement
Workload / Duration	4 days
Schedule information	4 days training
Location	Finspång Sweden
Learning activities	Theoretical and practical training, CAD/ CAM, Machining
Assessment Type	Practical test
Entry requirement	Technical studies or similar completed EQF 4
Admission procedure	https://www.cng.se/

Computer Aided Manufacturing (CAM) Basics

ADMA TRANSFORMATION AREA

This training provides the basics in CAM using Siemens NX. How to go from a CAD model into creating toolpaths for CNC-processing.

<https://community.lcamp.eu/catalog-item/cad-specialization/>

Advanced Manufacturing Technologies

CAM, Siemens NX, CNC

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
CAM Software	http://data.europa.eu/esco/skill/27065048-bca8-4b0a-891a-b192b9ceadfd	2
Program a CNC controller	http://data.europa.eu/esco/skill/bf942c60-8539-4951-83ee-63f770da1cb8	2

GENERAL INFORMATION

Course provider	Curt Nicolin Gymnasiet
Country	Sweden
Language	Swedish
Education Subject	CAD-Specialization
Learner Profile	EQF 5
Mode of Learning	In Person
Credential Type	Certificate of Completion
EQF Level	EQF 5
Teaching Methodology	Theoretical, Practical, Problem solving
Learning Environment	Classroom, Workshop

INFORMATION ABOUT THE COURSE

Start Date – End Date	According to agreement
Workload / Duration	4 days
Schedule information	4 days training
Location	Finspång Sweden
Learning activities	Theoretical and practical training, CAD/ CAM, Machining
Assessment Type	Practical test
Entry requirement	Technical studies or similar completed EQF 4
Admission procedure	https://www.cng.se/

CAM NX (2 1/2 AND 3 AXIS MILLING MACHINE)

ADMA TRANSFORMATION AREA

This course focuses on equipping participants with the essential skills to program and operate 2- and 3-axis milling machines using Siemens NX software.

<https://community.lcamp.eu/catalog-item/cam-nx-2-1-2-and-3-axis-milling-machine/>

Advanced Manufacturing Technologies; Digital Factory; Smart Manufacturing

CAM Programming

CURRENT MATURITY
LEVEL (1-5)

4



TARGET MATURITY
LEVEL (1-5)

5

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Tend a CNC milling machine	http://data.europa.eu/esco/skill/4cb58ef4-67a9-4bea-a743-2c83ebd60e79	4
Program CNC controller	http://data.europa.eu/esco/skill/bf942c60-8539-4951-83ee-63f770da1cb8	4
Use CAM software	http://data.europa.eu/esco/skill/7a757fa5-9a6f-43ab-9e66-f8f4dba1ffcb	4

GENERAL INFORMATION

Course provider	Miguel Altuna LH
Country	Spain
Language	Spanish
Learner Profile	CNC operator, machinist, or manufacturing technician with basic knowledge of CNC operations and CAD software, looking to enhance their CAM skills for efficient machining.
Mode of Learning	In Person
Credential Type	Microcredential Course
EQF Level	EQF 4
Teaching Methodology	Theoretical / Practical / Practical in CLF

INFORMATION ABOUT THE COURSE

Workload / Duration	40 Hours
Location	Miguel Altuna LH

CAM of subtractive machining processes

ADMA TRANSFORMATION AREA

Design of the manufacturing process of a subtractive manufacturing process by numerical simulation with CATIA V5. Students will learn to plan machining operations, generate tool paths, select cutting tools, and optimize processes through numerical simulation, combining efficiency, precision, and safety in industrial production.

<https://community.lcamp.eu/catalog-item/computer-aided-manufacturing-cam-of-subtractive-machining-processes/>

Advanced Manufacturing Technologies

Machining processes, digital tools, simulation

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
CAM software	http://data.europa.eu/esco/skill/27065048-bca8-4b0a-891a-b192b9ceadfd	3
Machine tools	http://data.europa.eu/esco/skill/f5084a43-42c9-4bbb-b47c-b3029cf8381d	3
Run simulations	http://data.europa.eu/esco/skill/a432ffcd-b58d-4417-836c-ea3282b626ca	2
Manufacturing processes	http://data.europa.eu/esco/skill/3786b61f-f22e-48d1-af8d-ad4c354534db	3

GENERAL INFORMATION

Course provider	Lycée La Découverte
Country	France
Language	French
Education Subject	Machining processes
Learner Profile	Students in EQF 5
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	5
Teaching Methodology	Theoretical & Practical
Learning Environment	VET Centre

INFORMATION ABOUT THE COURSE

Start Date – End Date	2025-02-03 2025—02-05
Workload / Duration	15 Hours
Location	Lycée La Découverte Decazeville France
Learning activities	Theoretical courses and practical work
Entry requirement	EQF 4 diploma
Admission procedure	Registration - Parcoursup

CNC machining from CAM

ADMA TRANSFORMATION AREA

This training provides knowledge in Post-processing a set-up from CAM, using Siemens NX and machining of the part, using CNC machines such as Milling and Turning machines.

<https://community.lcamp.eu/catalog-item/cad-specialization/>

Advanced Manufacturing
Technologies

CNC, CAM, Post-processing,
machining

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Program a CNC controller	http://data.europa.eu/esco/skill/bf942c60-8539-4951-83ee-63f770da1cb8	2
Tend CNC milling machine	http://data.europa.eu/esco/skill/4cb58ef4-67a9-4bea-a743-2c83ebd60e79	2
CAM Software	http://data.europa.eu/esco/skill/27065048-bca8-4b0a-891a-b192b9ceadfd	2

GENERAL INFORMATION

Course provider	Curt Nicolin Gymnasiet
Country	Sweden
Language	Swedish
Education Subject	CAD-Specialization, Industrial production methods
Learner Profile	EQF 5
Mode of Learning	In Person
Credential Type	Certificate of Completion
EQF Level	EQF 5
Teaching Methodology	Theoretical, Practical
Learning Environment	Workshop

INFORMATION ABOUT THE COURSE

Start Date – End Date	According to agreement
Workload / Duration	4 days
Schedule information	4 days training
Location	Finspång Sweden
Learning activities	Practical training in CNC turning and milling machine, CAM
Assessment Type	Practical test
Entry requirement	Technical studies or similar completed EQF 4
Admission procedure	https://www.cng.se/

CNC-machine Operation Basics

ADMA TRANSFORMATION AREA

This training provides an introduction to operating a CNC-machine, including safety and basic settings.

<https://www.cng.se/te4-gymnasieingenj%C3%B6r>

Advanced Manufacturing
Technologies

CNC, machine operating, PPE

CURRENT
MATURITY
LEVEL 1



TARGET
MATURITY
LEVEL 2

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Tend CNC milling machine	http://data.europa.eu/esco/skill/4cb58ef4-67a9-4bea-a743-2c83ebd60e79	1
Program a CNC controller	http://data.europa.eu/esco/skill/bf942c60-8539-4951-83ee-63f770da1cb8	1

GENERAL INFORMATION

Course provider	Curt Nicolin Gymnasiet
Country	Sweden
Language	Swedish
Education Subject	Industrial production methods
Learner Profile	EQF 5
Mode of Learning	In Person
Credential Type	Certificate of Completion
EQF Level	EQF 5
Teaching Methodology	Practical
Learning Environment	Workshop

INFORMATION ABOUT THE COURSE

Start Date – End Date	According to agreement
Workload / Duration	4 days
Schedule information	4 days training
Location	Finspång Sweden
Learning activities	Practical training in CNC turning machine and CNC milling machine
Assessment Type	Practical test
Entry requirement	Technical studies or similar completed EQF 4
Admission procedure	https://www.cng.se/

CNC Waste Reduction Strategies

ADMA TRANSFORMATION AREA

This training provides the basic practical methods to reduce waste and inefficiency in CNC-machining, using CAM Siemens NX.

<https://community.lcamp.eu/catalog-item/production-philosophy/>

ECO Factory

CAM, Siemens NX, CNC, LEAN

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
CAM Software	http://data.europa.eu/esco/skill/27065048-bca8-4b0a-891a-b192b9ceadfd	3
Tend CNC milling machine	http://data.europa.eu/esco/skill/4cb58ef4-67a9-4bea-a743-2c83ebd60e79	2
Continuous improvement philosophies	http://data.europa.eu/esco/skill/0550431f-9c8b-4204-9c45-59bc5feacf06	2

GENERAL INFORMATION

Course provider	Curt Nicolin Gymnasiet
Country	Sweden
Language	Swedish
Education Subject	Production Philosophy
Learner Profile	EQF 5
Mode of Learning	In Person
Credential Type	Certificate of Completion
EQF Level	EQF 5
Teaching Methodology	Theoretical, Practical
Learning Environment	Classroom, Workshop

INFORMATION ABOUT THE COURSE

Start Date – End Date	According to agreement
Workload / Duration	4 days
Schedule information	4 days training
Location	Finspång Sweden
Learning activities	Theoretical and practical training, CAD/ CAM, Machining
Assessment Type	Practical test
Entry requirement	Technical studies or similar completed EQF 4
Admission procedure	https://www.cng.se/

Collaborative Robot

ADMA TRANSFORMATION AREA

Using collaborative robots improve the production, risks and reduce production time. Get better work conditions. Make easy collaborative robot installations. Learn safety rules. Installation repair/changes. Insert a collaborative robot in the production.

<https://www.imh.eus/en>

Advanced Manufacturing Technologies, Digital Factory, Smart Manufacturing Engineering

Cobot, automation, robotics

CURRENT
MATURITY (1-5)
LEVEL: 3



TARGET
MATURITY
LEVEL (1-5): 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Install collaborative robots	https://esco.ec.europa.eu/en/skill/ed9290f6-f3a7-4bc7-9f5e-9e26a30e69a4	3
Ensure safety in collaborative robotics	https://esco.ec.europa.eu/en/skill/6e19de27-3693-4d3a-9484-5ef53b360b01	4
Perform maintenance on collaborative robots	https://esco.ec.europa.eu/en/skill/f8451baf-8c85-465b-b9cf-17fd315f77a7	4
Integrate collaborative robots into production lines	https://esco.ec.europa.eu/en/skill/d5e0f8d5-1380-4c89-bf78-8d1cf8a83c0c	3

GENERAL INFORMATION

Course provider	IMH CAMPUS
Country	Basque Country/ Spain
Language	English, Spanish
Mode of Learning	In-Person
Credential Type	Microcredential Course
EQF Level	4
Teaching Methodology	Theoretical / Practical

INFORMATION ABOUT THE COURSE

Workload / Duration	24 hours
Location	Elgoibar, Basque Country

Component inspection using a coordinate measuring machine

ADMA TRANSFORMATION AREA

Operate a three-dimensional measuring machine and carry out an inspection programme on the same machine. Participants will learn to set up and calibrate the CMM, program inspection routines, measure parts, and analyze results according to engineering standards.

<https://community.lcamp.eu/catalog-item/component-inspection-using-a-coordinate-measuring-machine-cmm/>

Advanced Manufacturing Technologies

Metrology, inspection programme, quality control, tolerances

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Metrology	http://data.europa.eu/esco/skill/a181e89d-44ae-40e7-8d37-177071237c74	3
Adjust measuring machines	http://data.europa.eu/esco/skill/236c446a-f4ff-4893-850a-0d93250c551f	2
Conduct quality control analysis	http://data.europa.eu/esco/skill/41a3240f-58ba-44e2-a688-edeb21ea5c16	2
Interpret geometric dimensions and tolerances	http://data.europa.eu/esco/skill/e3688cae-7a28-4405-88b5-6b87179e0d76	3

GENERAL INFORMATION

Course provider	Lycée La Découverte
Country	France
Language	French
Education Subject	Metrology
Learner Profile	Learners EQF 5
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	5
Teaching Methodology	Theoretical & Practical
Learning Environment	VET Centre

INFORMATION ABOUT THE COURSE

Start Date – End Date	2025-02-17 2025-02-18
Workload / Duration	7 Hours
Location	Lycée La Découverte Deazeville France
Learning activities	Theoretical classes and practical work
Entry requirement	EQF 4 diploma
Admission procedure	Registration - Parcoursup

Connected Workers

ADMA TRANSFORMATION AREA

Equip participants to design and manage “Connected Worker” solutions in an Industry 5.0 context, leveraging wearables, IoT sensors, AR/VR, mobile apps and dashboards for real-time posture, health and performance monitoring, on-the-job training and operator-machine collaboration.

<https://www.smarttvalley.it/manufacturing/>

Human-Centred Organisation;
Smart Manufacturing; Digital
Factory

Connected Worker · Wearables · IoT sensor integration · Real-time
KPI dashboards · AR/VR training · Mobile decision-support apps ·
Operator performance analysis · Well-being monitoring · Cobot
collaboration

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Human-robot interaction	http://data.europa.eu/esco/skill/9136cbf1-7916-4f1c-bc9a-0318ee1d6016	2
Analyze operator performance and well-being data	http://data.europa.eu/esco/skill/5d204ec8-981b-4405-9a82-0b1cb21ca9d3	3
Introduce XR/VR and mobile applications for on-the-job training	http://data.europa.eu/esco/skill/S1.3.3	2
Integrate wearable and IoT sensor data for worker monitoring	http://data.europa.eu/esco/skill/8a753714-9a19-4418-9b37-77e79d72c705	3

GENERAL INFORMATION

Course provider	Fondazione Ergo
Country	Italy
Language	Italian / English
Education Subject	Design and management of “Connected Worker” solutions in an Industry 5.0 context
Learner Profile	Digital-transformation leads, HSE specialists, line managers, ergonomists
Mode of Learning	In-Person/Hybrid
Credential Type	Certificate
EQF Level	6
Teaching Methodology	Theoretical / Practical / Practical in CLF
Learning Environment	Classroom, Campus Smartt Valley KIIS

INFORMATION ABOUT THE COURSE

Workload / Duration	3 days (24h) – approx
Price	Depending on time schedule and location
Location	Learning Factory, Smartt Valley
Learning activities	Connected-Worker prototype demo + data-analysis report
Assessment Type	Multiple choice assessment costumized on client needs + situational interview
Entry requirement	Basic familiarity with industrial data systems;

The course’s content, schedule and location can be adapted to the needs of the recipients.

CORPORATE SUSTAINABILITY BASICS

ADMA TRANSFORMATION AREA

This introductory course provides a comprehensive overview of corporate sustainability, equipping participants with the fundamental knowledge and tools necessary to understand and implement sustainability strategies in the corporate world. The course explores the key principles of environmental, social, and governance (ESG) frameworks, sustainable business models, and how companies can balance profitability with positive societal and environmental impacts.

<https://community.lcamp.eu/catalog-item/gebkim-oiz-corporate-sustainability-basics/>

ECO FACTORY

ECO-EFFICIENT PRODUCTION

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Corporate sustainability	Corporate sustainability	4
Promote sustainability	Promote sustainability	4

GENERAL INFORMATION

Course provider	GEBKIM OIZ
Country	Türkiye
Language	Turkish
Education Subject	This course introduces learners to the foundations of corporate sustainability, covering environmental, social, and governance (ESG) principles, sustainability reporting, green business strategies, and regulatory frameworks relevant to modern organizations.
Learner Profile	VET Students
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF 4
Teaching Methodology	Theoretical / Practical
Learning Environment	VET Centre

INFORMATION ABOUT THE COURSE

Workload / Duration	20 Hours
Location	GEBKIM OIZ
Learning activities	Lectures, Practices
Assessment Type	Quizzes and mid-term evaluations, Exam
Entry requirement	Interest in
Admission procedure	Online or in-person application submission

Cybersecurity

ADMA TRANSFORMATION AREA

This course introduces learners to the fundamentals of cybersecurity and digital protection. It covers key concepts such as data security, network protection, threat detection, and risk management. Learners will explore common cyber threats and vulnerabilities, understand how to safeguard systems and information

<https://3tindustry40training.eu/course/view.php?id=14>

Digital Factory

Cybersecurity, ICT, digital technologies

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Cyber security	http://data.europa.eu/esco/skill/8088750d-8388-4170-a76f-48354c469c44	2
ICT security legislation	http://data.europa.eu/esco/skill/7814e88f-c133-4c3b-b27f-857afa145d42	1
Implement ICT safety policies	http://data.europa.eu/esco/skill/14d1e367-3efe-4ec5-86ae-eca48710ee4e	1

GENERAL INFORMATION

Course provider	3TIndustry
Country	France Spain and Germany
Language	English
Education Subject	ICT
Mode of Learning	Online
Credential Type	None
EQF Level	None
Teaching Methodology	Theoretical
Learning Environment	E learning

INFORMATION ABOUT THE COURSE

Start Date – End Date	Non applicable
Workload / Duration	3 Hours
Price	Free
Location	Online
Learning activities	Theoretical
Assessment Type	Quiz
Entry requirement	None
Admission procedure	Registration to the platform

Cybersecurity in industry

ADMA TRANSFORMATION AREA

Training service for security technologies and trust in digital system. The weak point of digital transformation when it does not contemplate the “security by design” principles nor does it comply with protective measures in depth.

Digital Factory

Cyber Threat Management;
Defense in Depth

CURRENT MATURITY
LEVEL (1-5)

3



TARGET MATURITY
LEVEL (1-5)

4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
implement ICT security policies	http://data.europa.eu/esco/skill/14d1e367-3efe-4ec5-86ae-eca48710ee4e	2
handle cybersecurity incidents	http://data.europa.eu/esco/skill/8181aa4c-42bc-4036-a3d2-5cb6bbb34239	3
perform risk analysis	http://data.europa.eu/esco/skill/1dd23dba-dd00-45ab-abf4-642902538317	3

GENERAL INFORMATION

Course provider	TECNALIA RESEARCH & INNOVATION
Country	Spain
Language	English, Spanish
Education Subject	Tecnalia experience in cybersecurity. Development of proof of concept and solutions based on privacy or traceability technologies. Tools and methods to ensure safety & security from the early stages of design. Technologies for controlling and safeguarding the security of systems, data, and networks. Management of security risks in critical systems. With this, we offer new applications in the following areas: Distributed Ledger Technologies: Blockchain Distributed Ledgers. Security, privacy and protection by design. Identity/privacy management solutions. Control, Protection and Risk Management. Artificial Intelligence for cybersecurity (e.g. Adversarial ML). Cyber Ranges and Attack Simulations. Quantum Security / Post-Quantum Cryptography. Compliance within new cybersecurity scenarios.
Learner Profile	Introduction and advanced
Mode of Learning	Hybrid
Credential Type	Training programme
Teaching Methodology	Theoretical / Practical / Practical in CLF

INFORMATION ABOUT THE COURSE

Workload / Duration	4 Hours
Location	TECNALIA RESEARCH & INNOVATION

Development of an Environmental Responsibility and Circular Economy Plan

ADMA TRANSFORMATION AREA

The objective of an Environmental Responsibility Plan is to define a set of guidelines for any company or organization to help protect the environment by reducing the impact of their actions on the natural surroundings and being highly aware of the importance of environmental care in all their activities.

<https://www.lhusurbil.eus/web/Default.aspx?lng=EU>

Eco Factory, Human Centred Organization

Environment, green company, organization

CURRENT
MATURITY (1-5)
LEVEL: 4



TARGET
MATURITY
LEVEL (1-5): 5

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Develop environmental policy	https://esco.ec.europa.eu/en/skill/c0df7ca4-2953-4e2d-a6cd-e82692c19da1	3
Apply environmental legislation	https://esco.ec.europa.eu/en/skill/9a7ec89e-5003-4933-a1a1-18132578032e	4
Promote environmental awareness	https://esco.ec.europa.eu/en/skill/79dd84f6-b429-4bc0-9381-c1697dc99f47	4
Implement environmental management systems	https://esco.ec.europa.eu/en/skill/9cb6f95c-8f18-4c69-b745-f1eaf5409a90	3
Assess environmental impact	https://esco.ec.europa.eu/en/skill/3e3d17b0-13f7-4dd9-94ff-cd6e164bd9f0	4

GENERAL INFORMATION

Course provider	CIFP Usurbil LHII
Country	Basque Country/ Spain
Language	Spanish
Learner Profile	Unemployees and employees from various sectors interested in environmental management, and individuals seeking to enhance their understanding of environmental impact reduction strategies within organizations.
Mode of Learning	In Person
Credential Type	Microcredential Course
EQF Level	EQF 5
Teaching Methodology	Theoretical / Practical / Practical in CLF

INFORMATION ABOUT THE COURSE

Workload / Duration	21 hours
Price	Free
Location	Usurbil, Basque Country

Design 4.0

ADMA TRANSFORMATION AREA

The course will present technologies and approaches typical of the new way of understanding product design and development, from modern approaches for life cycle management (PLM) to virtual and augmented reality in the context of product development. At the same time application examples from different industrial sectors will be presented.

<https://www.made-cc.eu/en/servizio/training-skills/>

Digital Factory, End-to-end
Customer Focused Engineering,
Smart Manufacturing

Product Design and Simulation,
Augmented and Virtual Reality

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Work with virtual learning environments	http://data.europa.eu/esco/skill/b78f324d-e16c-43f8-97d2-50d3a7cd1fb3	2
Run simulations	http://data.europa.eu/esco/skill/a432ffcd-b58d-4417-836c-ea3282b626ca	2

GENERAL INFORMATION

Course provider	MADE Competence Center Industry 4.0
Country	Italy
Language	Italian
Education Subject	Product Design, Industry 4.0, Engineering
Learner Profile	Workers, Engineers, Design Professionals
Mode of Learning	Online / Hybrid / In Person
Credential Type	Microcredential
EQF Level	EQF3
Teaching Methodology	Practical
Learning Environment	Classroom

INFORMATION ABOUT THE COURSE

Start Date – End Date	TBD
Workload / Duration	4 hours
Schedule information	The course presents technologies and approaches typical of the new view of product design and development, from modern life-cycle management (PLM) to virtual and augmented reality in the product development context. Application examples from a range of industrial sectors are presented in conjunction with this.
Price	450 EUR
Location	Milan, Italy
Learning activities	Hands-on labs, case studies, technology demonstrations
Assessment Type	Final test and evaluation
Entry requirement	Basic understanding of product design and industrial processes
Admission procedure	By filling up online module - Formare competenze - Made

Design for Additive Manufacturing (DfAM)

ADMA TRANSFORMATION AREA

This training provides insights into how to design parts optimized for 3D printing, focusing on material efficiency, functionality and manufacturability. Part of the course CAD – Specialization.

<https://community.lcamp.eu/catalog-item/cad-specialization/>

Advanced Manufacturing Technologies

CAD, Additive Manufacturing, 3D-printing

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
CAD Software	http://data.europa.eu/esco/skill/a2b5dcf3-5b6a-453d-876c-cff540c0faf1	3
3D Printing process	http://data.europa.eu/esco/skill/2afb2b59-c9a3-4cf3-b1dd-1a2fad51e583	3

GENERAL INFORMATION

Course provider	Curt Nicolin Gymnasiet
Country	Sweden
Language	Swedish
Education Subject	CAD-Specialization
Learner Profile	EQF 5
Mode of Learning	In Person
Credential Type	Certificate of Completion
EQF Level	EQF 5
Teaching Methodology	Theoretical , Practical, problem solving
Learning Environment	Classroom, Educational Lab

INFORMATION ABOUT THE COURSE

Start Date – End Date	According to agreement
Workload / Duration	4 days
Schedule information	4 days training
Location	Finspång Sweden
Learning activities	Theoretical and practical training, CAD and 3D Printing
Assessment Type	Practical Test
Entry requirement	Technical studies or similar completed EQF 4
Admission procedure	https://www.cng.se/

ECET-292 Design of Manufacturing

ADMA TRANSFORMATION AREA

ADVANCED MANUFACTURING

Manufacturing Design

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

Students will study material that emphasizes the relationship of electronic design and manufacturing, including an introduction to CAD/CAM, Resource Management, Thermal Management and various standards. They will also examine design methodology for the various materials and equipment used in the manufacture of electronic products.

[ECET 292 - Design for Manufacturing - Modern Campus Catalog™](#)

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
K072 Manufacturing and Processing	http://data.europa.eu/esco/iscd-f/072	4
K0710 Engineering and Engineering Trades not further defined	http://data.europa.eu/esco/iscd-f/070	4

GENERAL INFORMATION

Course provider	Camosun College
Country	Canada
Language	English
Education Subject	Electronics & Computer Engineering Technology
Learner Profile	College Students
Mode of Learning	In Person
Credential Type	College Diploma
EQF Level	4
Teaching Methodology	Practical
Learning Environment	In Classroom

INFORMATION ABOUT THE COURSE

Start Date – End Date	Four-month term
Workload / Duration	75 Hours
Price	\$749.84 CAD
Location	Camosun College
Learning activities	Lectures, analysis, and direct experience
Assessment Type	Papers / Exams / Physical Tests
Entry requirement	Requires prerequisite course from Camosun College
Admission procedure	Apply as part of Camosun electronics and computer engineering degree

Digital Operation

ADMA TRANSFORMATION AREA

The course aims to introduce participants to the two industrial production paradigms (Lean production and Industry 4.0) by integrating them. In order to optimize the transition to Industry 4.0, identifying the processes to be followed, the resources to be allocated, and the investments to be made, it is essential to adopt a management and production method that minimizes costs and waste.

<https://www.made-cc.eu/en/servizio/training-skills/>

Digital Factory, Smart Manufacturing

Industrial Engineering, Operations management, Artificial Intelligence

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Optimise production	http://data.europa.eu/esco/skill/798d427e-51b3-4cd4-8b24-1357015e9ae7	3
Operations management	http://data.europa.eu/esco/skill/2d140a3a-45a6-4248-80dd-b3760ebc9cc6	3

GENERAL INFORMATION

Course provider	MADE Competence Center Industry 4.0
Country	Italy
Language	Italian
Education Subject	Lean production and Industry 4.0
Learner Profile	Quality managers, Production managers, Programmers, Production directors, Department heads, Function managers
Mode of Learning	Online / Hybrid / In Person
Credential Type	Microcredential
EQF Level	EQF4
Teaching Methodology	Theoretical / Practical / Practical in CLF
Learning Environment	Classroom

INFORMATION ABOUT THE COURSE

Workload / Duration	6 Hours
Schedule information	At the end of the course, learners experience digital factory application examples first-hand, with a special focus on Digital Twinning process and logistics. A focus on maximum participant-lecturer interaction during the lessons with a marked operational focus in teaching methods on real business context experiences.
Price	450 EUR
Location	Milan, Italy
Learning activities	Introduction to production process planning and control; digital twinning for process simulation; AR/VR solutions to support industrial processes; MES as an enabling technology for real-time production control; elements of Lean 4.0; IoT: from smart product to industrial process control and monitoring; product quality and traceability
Assessment Type	Final test and evaluation
Entry requirement	Managers, SME entrepreneurs
Admission procedure	By filling up online module - Formare competenze - Made

Digital Transformation pathway

ADMA TRANSFORMATION AREA

The Digital Transformation pathway is a training programme on digital technologies with lectures and industrial visits with the objective to explain new technologies and their impact on the company development.

<https://www.made-cc.eu/it/corso/percorso-digital-transformation/>

Digital Factory, Smart Manufacturing

Industry 4.0 and 5.0, Open Innovation, Circular Economy

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Keep up with digital transformation of industrial processes	http://data.europa.eu/esco/skill/0458f6a0-cb54-4ff5-a543-b2c5354e17c0	3
Data extraction, transformation and loading tools	http://data.europa.eu/esco/skill/9d0d89be-bffa-4393-b6f6-8d05bea49051	2

GENERAL INFORMATION

Course provider	MADE Competence Center Industry 4.0
Country	Italy
Language	Italian
Education Subject	Industry 4.0
Learner Profile	Managers, entrepreneurs and professionals
Mode of Learning	Online + company visits
Credential Type	Microcredential
EQF Level	EQF4
Teaching Methodology	Practical
Learning Environment	Online

INFORMATION ABOUT THE COURSE

Start Date – End Date	30 September 2025
Workload / Duration	4 hours
Price	1000 EUR
Location	Milan, Italy
Learning activities	Module 1 - Trends in manufacturing Module 2 - Analysis, costs and benefits of introducing new technologies Module 3 - Open Innovation Module 4 - What it means to be a Data Driven Company Module 5 - What it means to be a sustainable company
Assessment Type	No formal exam or graded assessment. Participation-based evaluation
Entry requirement	No prior coding or deep technical expertise required, but a basic understanding of business or operations is probably expected
Admission procedure	By filling up online module - Formare competenze - Made

Electrical Discharging Machining (EDM) processes

ADMA TRANSFORMATION AREA

This intensive hands-on course introduces learners to Electrical Discharge Machining (EDM) technology, with a special focus on tool and die manufacturing, CAD design using SolidWorks, and machine programming. Participants will explore the fundamentals of stamping die and mold theory, and apply their knowledge in a real workshop environment using the ONA AV-35 EDM machine and Teksoft CAM software.

Through practical projects, students will learn to interpret technical drawings, model components in 3D CAD, and prepare EDM operations from setup to execution. This includes aligning the workpiece, setting offsets, and executing wire and die-sinking EDM processes.

Digital Factory, Advanced Manufacturing Technologies

EDM, CAD, CAM, Solidworks, programming

CURRENT MATURITY
LEVEL (1-5)

3

TARGET MATURITY
LEVEL (1-5)

4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Tend spark erosion machine	http://data.europa.eu/esco/skill/347162b5-d136-4791-b2a5-392f37a5d1c0	3
Technical drawings	http://data.europa.eu/esco/skill/59ea80e1-463a-4dba-82c6-d0b6d577d532	2
Operate precision machinery	http://data.europa.eu/esco/skill/d8045ecd-22f3-4711-bb51-58969d9f28c7	2
Use CAM software	http://data.europa.eu/esco/skill/7a757fa5-9a6f-43ab-9e66-f8f4dba1ffcb	3

GENERAL INFORMATION

Course provider	CIFP Armeria eskola LHII
Country	Basque Country – Spain
Language	English
Education Subject	Machining
Learner Profile	Mechanical students
Mode of Learning	In Person
EQF Level	4/5
Teaching Methodology	Practical in CLF
Learning Environment	Workshop

INFORMATION ABOUT THE COURSE

Workload / Duration	60 Hours
Location	CIFP Armeria eskola LHII
Learning activities	EDM Theory ONA AV35 Machine Operation Stamping and Die Theory SolidWorks Design CAM Programming for EDM
Assessment Type	Final project
Entry requirement	Enrolment in mechanical cycle EQF4/5

Electronic Assembly of the LCAMP Robot: Soldering Components, Motor Driver Regulation, and DC-DC Converters

This course provides a deep understanding of stepper motors, including their operation, applications, driver regulation, DC-DC regulator parameterization, and practical soldering techniques. It integrates these concepts with the Industrial Automation and Robotics curriculum.

<https://www.maltuna.eus/es/>

ADMA TRANSFORMATION AREA

Advanced Manufacturing Technologies, Digital Factory

Electronic welding, electronics, robotics

CURRENT
MATURITY (1-5)
LEVEL: 3



TARGET
MATURITY
LEVEL (1-5): 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Maintain electric motors	https://esco.ec.europa.eu/en/skill/f1914a84-4cf8-4ea4-b8f6-96736a3e5703	3
Apply principles of motor control	https://esco.ec.europa.eu/en/skill/7b00e5e6-94c0-4bd1-b663-b7f7a5a77cbb	4
Integrate electrical components into control systems	https://esco.ec.europa.eu/en/skill/40a9bc3e-46d3-4c3c-8f15-2e49e05fbb14	3
Install electronic control equipment	https://esco.ec.europa.eu/en/skill/36ae938d-183e-4c1b-bc12-4fdc57d4a9f1	4

GENERAL INFORMATION

Course provider	Miguel Altuna LHII
Country	Basque Country, Spain
Language	Basque
Education Subject	Industrial Automation and Robotics
Learner Profile	Engineering students, automation technicians, robotic enthusiasts
Mode of Learning	In Person
Credential Type	Certification of Completion
EQF Level	EQF4-5
Teaching Methodology	Practical in CLF
Learning Environment	CLF

INFORMATION ABOUT THE COURSE

Workload / Duration	15 hours
Schedule information	During the hours of the courses Power Systems and Measurement and Regulation Systems
Price	0€
Location	Bergara, Miguel Altuna LHII
Learning activities	Theoretical lessons, practical soldering exercises, stepper motor control experiments, Arduino integration workshops.
Assessment Type	Teaching demonstrations, lesson plan evaluations, peer reviews
Entry requirement	First-year students of Robotics and Industrial Automation.

FULL LEARNING OUTCOMES

1. Understand the working principles of stepper motors and their role in industrial automation.
2. Identify different types of stepper motors and their applications.
3. Learn to regulate and configure stepper motor drivers for optimal performance.
4. Explore the importance of DC-DC regulators and their parameterization.
5. Develop practical skills in soldering for assembling and repairing motor control circuits.
6. Integrate stepper motor applications into automation and robotics systems.

ECET-291 Engineering Project Management

ADMA TRANSFORMATION AREA

Students are introduced to engineering project management and budgeting techniques, as well as strategies for effective project teamwork. They will also study engineering standards, the effect of engineering on the environment, professional responsibility, and engineering ethics.

[ECET 291 - Engineering Project Management - Modern Campus Catalog™](#)

END-TO-END CUSTOMER-
FOCUSED ENGINEERING

Project Management

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
S4.0 Management Skills	http://data.europa.eu/esco/skill/c1a13ee0-b00d-4cfa-a22c-20d284e398b0	4
S4.3 Allocating and Controlling Resources	http://data.europa.eu/esco/skill/9827c329-3492-4e8d-852c-da0894228ff6	4
K0710 Engineering and Engineering Trades not further defined	http://data.europa.eu/esco/iscde-f/070	4

GENERAL INFORMATION

Course provider	Camosun College
Country	Canada
Language	English
Education Subject	Electronics & Computer Engineering Technology
Learner Profile	College Students
Mode of Learning	Online
Credential Type	Micro-Credential
EQF Level	4
Teaching Methodology	Practical
Learning Environment	In Classroom

INFORMATION ABOUT THE COURSE

Start Date – End Date	Four-month term
Workload / Duration	175 Hours
Price	\$374.92 CAD
Location	Camosun College
Learning activities	Lectures, labs, and group work
Assessment Type	Group work and project development
Entry requirement	Prerequisite college courses
Admission procedure	Apply via Electronics & Computer Engineering Technology program

Ergonomics in Industry 5.0

This course provides an in-depth overview of ISO 11228/11226 standards and ergonomic risk mapping, hands-on training with EAWS calculation methods to quantify the risk of biomechanical overload, and a deep dive into the Ergo-MTM methodology via the TiCon Base, EAWS, Takt modules. Participants will learn to assess and optimize work postures, forces and repetitive tasks in Industry 5.0 environments.

<https://www.smarttvalley.it/manufacturing/>

ADMA TRANSFORMATION AREA

Human-Centred Organisation;
Smart Manufacturing; Digital
Factory

Ergonomic risk mapping · ISO 11228 · ISO 11226 · EAWS (Ergonomic Assessment Work-sheet) · Ergo-MTM methodology · TiCon Base · TiCon EAWS · TiCon Takt · Biomechanical load assessment · Repetitive task analysis

CURRENT
MATURITY
LEVEL 1



TARGET
MATURITY
LEVEL 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Follow safety precautions in work practices	http://data.europa.eu/esco/skill/d2d9051a-10e1-41c5-9cfb-bbdc58016176	2
Analyse ergonomics in different workplaces	http://data.europa.eu/esco/skill/a2e4fe18-b65d-46c2-8bee-d81fad8cd53b	3
Plan manufacturing process	http://data.europa.eu/esco/skill/7d0f33ea-e724-4d77-8b75-ee4fe66bb9ba	3
Perform ergonomic risk assessments	http://data.europa.eu/esco/skill/d3a0f1fd-3a6e-452c-84a2-dc594b403a18	3

GENERAL INFORMATION

Course provider	Fondazione Ergo
Country	Italy
Language	Italian / English
Education Subject	Ergonomics: introduction to ISO/CEN Standards; EAWS calculation method for a comprehensive ergonomic assessment of work postures, forces and repetitive tasks in Industry 5.0 environments; introduction to Ergo-MTM model (TiCon)
Learner Profile	Ergonomists, HSE specialists, process engineers, safety managers
Mode of Learning	In-Person/Hybrid
Credential Type	Certificate
EQF Level	5-6
Teaching Methodology	Theoretical / Practical / Practical in CLF
Learning Environment	Classroom, Experience lab with workstations, Campus Smartt Valley Ergo-Lab

INFORMATION ABOUT THE COURSE

Workload / Duration	8 days – approx
Price	Depending on time schedule and location
Location	Learning Factory, Smartt Valley
Learning activities	ISO-standard lectures, EAWS scoring theory and examples, TiCon-guided simulations, group risk-mapping exercises
Assessment Type	Multiple choice assessment customized on client needs + situational interview
Entry requirement	Familiarity with basic ergonomic concepts

The course's content, schedule and location can be adapted to the needs of the recipients.

Factory Logistics 4.0

ADMA TRANSFORMATION AREA

Explore the enabling technologies of Factory Logistics 4.0—IoT/RFID for real-time traceability, AGVs/AMRs for automated material handling, Digital Twins for flow simulation, and Advanced Analytics/AI for demand forecasting and inventory optimization, integrated with MES/WMS/ERP to synchronize production and supply chain. Hands-on cases illustrate “just-in-time” delivery and uptime improvement.

<https://www.smarttvalley.it/manufacturing/>

Value Chain-Oriented Open
Factory; Smart Manufacturing;
Digital Factory

RFID & IoT traceability · AGVs & AMRs · Digital Twin simulation ·
Advanced Analytics & AI forecasting · MES/WMS/ERP integration ·
Cross-departmental interoperability · Flow optimization

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Deploy IoT and RFID systems for real-time asset tracking	http://data.europa.eu/esco/skill/9136cbf1-7916-4f1c-bc9a-0318ee1d6016	3
Build and validate Digital Twin models for logistics flow simulation	http://data.europa.eu/esco/skill/737f8895-46df-4283-8f38-13f3f0fc3b77	4
Apply advanced analytics and AI for demand forecasting and inventory optimization	http://data.europa.eu/esco/skill/8dcbcabe-09f7-4d11-940d-125af57bbc40	4
Integrate MES, WMS and ERP systems to synchronize production and supply chain	http://data.europa.eu/esco/skill/8a753714-9a19-4418-9b37-77e79d72c705	3

GENERAL INFORMATION

Course provider	Fondazione Ergo
Country	Italy
Language	Italian / English
Education Subject	Enabling technologies of Factory Logistics 4.0
Learner Profile	Logistics engineers, operations managers, supply-chain analysts, automation specialists
Mode of Learning	In-Person/Hybrid
Credential Type	Certificate
EQF Level	6
Teaching Methodology	Theoretical / Practical / Practical in CLF
Learning Environment	Classroom, Campus Smartt Valley KIIS

INFORMATION ABOUT THE COURSE

Workload / Duration	3 days (24h) – approx
Price	Depending on time schedule and location
Location	Learning Factory, Smartt Valley
Learning activities	RFID tagging exercises, AGV route planning, Digital Twin flow builds, AI-forecasting case studies
Assessment Type	Multiple choice assessment customized on client needs + situational interview
Entry requirement	Basic logistics concepts and familiarity with ERP/WMS systems

The course’s content, schedule and location can be adapted to the needs of the recipients.

FANUC INDUSTRIAL ROBOT PROGRAMMING

ADMA TRANSFORMATION AREA

Participants learn how to work safely with an industrial robot, learn about the structure of an industrial robotic system and know how to program a robot for a selected robotic application.

https://www.tscmb.si/wp-content/uploads/2023/04/OPIS_PROGRAMA-Programiranje_Fanuc_robota-TSC_MB.pdf

Advanced Manufacturing

Robotic components, PLC integration, Automation, Robotics

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Robotics	http://data.europa.eu/esco/skill/e87ec79a-c9ff-46f5-84fa-7a0f394cdf40	2
Robotic Components	http://data.europa.eu/esco/skill/7a950986-27fe-4b6c-adf3-88f211e77019	3
Maintain Robotic Equipment	http://data.europa.eu/esco/skill/7341904f-5913-470c-8c53-bc832df248ec	3

GENERAL INFORMATION

Course provider	TŠC Maribor
Country	Slovenia
Language	Slovenian
Education Subject	Automation
Learner Profile	Students, workers
Mode of Learning	In Person
Credential Type	Paper based
EQF Level	5
Teaching Methodology	Theoretical / Practical
Learning Environment	School laboratory

INFORMATION ABOUT THE COURSE

Start Date – End Date	24/02/2025 – 07/03/2025
Workload / Duration	40 Hours
Price	420,00 EUR + VAT
Location	Zolajeva ulica 12, 2000 Maribor, Slovenia
Learning activities	Lecture, exercise, discussion, laboratory work
Assessment Type	Self-assessment learning diaries or portfolios – test reflection skills
Entry requirement	https://www.tscmb.si/wp-content/uploads/2025/01/VABILO_USPOSABLJANJE_ROBOTIKA_POMLAD_2025.pdf
Admission procedure	https://www.tscmb.si/wp-content/uploads/2023/03/PRIJAVNICA_za_institucionalna-usposabljanja-1.pdf

FREE-FORM SURFACE MODELING

The Free-form Surface Modeling course is an upgrade to the Creo Parametric Fundamentals course and serves as a starting point for fast and efficient work with complex surface models for every designer of products and devices with demanding shapes.

<https://ti.audax.si/tecaji/modeliranje-prostih-povrsin-96?prijava=1&idtecaji=96&idtermin=16553>

ADMA TRANSFORMATION AREA

Advance manufacturing technologies

Surface Design, Curve Modeling, Solid Modeling

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
3D modelling	http://data.europa.eu/esco/skill/97965983-0da4-4902-9daf-d5cd2693ef73	3
Apply reverse engineering	http://data.europa.eu/esco/skill/a7a14be2-78b5-4b4a-ba77-2658285e2756	4

GENERAL INFORMATION

Course provider	Audax d. O. O.
Country	Slovenia
Language	Slovenian
Education Subject	Curve Modeling, Surface Creation (Extrude, Revolve, Fill, Sweep, Blend, Boundary Blend, Rotational Blend, Swept Blend, Variable Section Sweep)
Learner Profile	adult
Mode of Learning	In Person
Credential Type	Certificat
EQF Level	EQF 5
Teaching Methodology	Practical training, solution solving
Learning Environment	Educational lab

INFORMATION ABOUT THE COURSE

Start Date – End Date	01/10/2025 – 03/10/2025
Workload / Duration	2 days
Schedule information	2 days training
Location	Ljubljana
Learning activities	Creating and configuration, practical training
Assessment Type	Practical test
Entry requirement	Creo Parametric Fundamentals Course and prior independent practical work with Creo software.

Functional Safety

ADMA TRANSFORMATION AREA

MC 2322 Functional Safety

Part of the lecture T4WIW9014

Learning Outcome: The various aspects of safety in machinery (e.g. the Machinery Directive, SIL, Performance Level, CE, etc.).

<https://www.heidenheim.dhbw.de/en/home>

Advanced Manufacturing, Smart Manufacturing

Safety, machinery

CURRENT
MATURITY (1-5)
LEVEL 4



TARGET
MATURITY
LEVEL (1-5)
LEVEL 5

GENERAL INFORMATION

Course provider	DHBW Heidenheim
Country	Germany
Language	German
Education Subject	Functional Safety
Learner Profile	A-levels
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF6
Teaching Methodology	Lecture
Learning Environment	HVET Centre

INFORMATION ABOUT THE COURSE

Start Date – End Date	01.10.25 – 31.12.25
Workload / Duration	2 ECTS / 50h
Location	DHBW Heidenheim (Baden-Wuerttemberg Cooperative State University)

ESCO skills

Safety engineering

<http://data.europa.eu/esco/skill/47d491a9-f7c0-4b13-a10f-983d3aa0113e>

Selected teaching units are explored in greater depth in the laboratory.

Automation systems – laboratory:

- Automation components (e.g. industrial robots or machine tools).
- Modular production systems (e.g. learning factories).

FUNDAMENTALS OF ROBOTICS

ADMA TRANSFORMATION AREA

The Fundamentals of Robotics course provides a comprehensive introduction to the principles, technologies, and applications of robotics in modern industries. Designed for learners seeking to understand the core components of robotic systems.

<https://community.lcamp.eu/catalog-item/fundamentals-of-robotics/>

Advanced Manufacturing
Technologies, Digital Factory

Application of robotics to
industrial processes

CURRENT MATURITY
LEVEL (1-5)

3



TARGET MATURITY
LEVEL (1-5)

4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Set up automotive robot	http://data.europa.eu/esco/skill/e975b791-b488-4935-be44-06f2f9a443bb	2
Maintain control systems for automated equipment	http://data.europa.eu/esco/skill/df12fd50-55dc-4cfd-a021-818880668789	3
Human-robot collaboration	http://data.europa.eu/esco/skill/0f5374e3-0b9b-4b16-af7a-49654ce0bb15	3

GENERAL INFORMATION

Course provider	Miguel Altuna LH
Country	Spain
Language	Spanish
Education Subject	Historical background of robotics Morfology of the robot Mathematical Tools for Spatial Localization Robot Kinematics Kinematic Control Robot Programming Criteria for the Implementation of an Industrial Robot Industrial application
Learner Profile	Unemployed individuals,CNC operators, machinist, or manufacturing technicians with basic knowledge of CNC operations and CAD software.
Mode of Learning	In Person
Credential Type	Microcredential course
EQF Level	EQF 4
Teaching Methodology	Theoretical and Practical

INFORMATION ABOUT THE COURSE

Workload / Duration	50 hours
Location	Miguel Altuna LH

ADMA TRANSFORMATION AREA

Deepen knowledge of emerging technologies for improving human-machine interaction in industrial workplaces, with a focus on ergonomics, well-being, and productivity. Provide tools to integrate digital and wearable solutions in an Industry 5.0 approach, maintaining the centrality of the human in production processes.

<https://www.smarttvalley.it/manufacturing/>

Human-Centred Organisation;
Smart Manufacturing; Digital
Factory

Immersive simulation · Digital Twin ergonomics · AR/VR workstation design · Wearable posture monitoring · Biomechanical stress analysis · Exoskeleton applications · Human-centric integration · Cobot-operator collaboration

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Digital modelling technologies	http://data.europa.eu/esco/skill/737f8895-46df-4283-8f38-13f3f0fc3b77	3
Supervise worker safety	http://data.europa.eu/esco/skill/5d204ec8-981b-4405-9a82-0b1cb21ca9d3	3
Integrate human-centric technologies into standard workflows	http://data.europa.eu/esco/skill/33c8742f-fc91-433b-8d3f-3238f7e3018f	3
Perform ergonomic risk assessments	http://data.europa.eu/esco/skill/d3a0f1fd-3a6e-452c-84a2-dc594b403a18	3

GENERAL INFORMATION

Course provider	Fondazione Ergo
Country	Italy
Language	Italian / English
Education Subject	Improvement of human-machine interaction in industrial workplaces; integration of digital and wearable solutions in an Industry 5.0 approach
Learner Profile	Ergonomists, HSE specialists, automation and digital-transformation managers
Mode of Learning	In-Person/Hybrid
Credential Type	Certificate
EQF Level	5-6
Teaching Methodology	Theoretical / Practical / Practical in CLF
Learning Environment	Classroom, Experience lab with workstations, Campus Smartt Valley KIIS and Ergo-Lab

INFORMATION ABOUT THE COURSE

Workload / Duration	3 days (24 h) – approx
Price	Depending on time schedule and location
Location	Smartt Valley
Learning activities	AR/VR ergonomics workshop, wearable-sensor and device presentation, exoskeleton introduction
Assessment Type	Multiple choice assessment customized on client needs + situational interview
Entry requirement	Familiarity with basic ergonomic concepts

The course's content, schedule and location can be adapted to the needs of the recipients.

ADMA TRANSFORMATION AREA

MC 2323 Industrial Communication

Part of the lecture T4WIW9014

Learning Outcome: Automation components include robots, networks, industrial communication systems (e.g. CoDeSys and SCADA), and programming systems.

<https://www.heidenheim.dhbw.de/en/home>

Advanced Manufacturing, Smart Manufacturing

Automation, robots, systems

CURRENT
MATURITY (1-5)
LEVEL 4



TARGET
MATURITY
LEVEL (1-5)
LEVEL 5

GENERAL INFORMATION

Course provider	DHBW Heidenheim
Country	Germany
Language	German
Education Subject	Industrial Communication
Learner Profile	A-Levels
Mode of Learning	In Person / Lab
Credential Type	ECTS
EQF Level	EQF6
Teaching Methodology	Lecture
Learning Environment	HVET Centre

INFORMATION ABOUT THE COURSE

Start Date – End Date	01.10.25 – 31.12.25
Workload / Duration	2 ECTS / 50h
Location	DHBW Heidenheim (Baden-Wuerttemberg Cooperative State University)

ESCO skills

Apply technical communication skills

<http://data.europa.eu/esco/skill/c32ad607-0c4d-4e34-b73f-668298f7bf13>

Selected teaching units are explored in greater depth in the laboratory.

Automation systems – laboratory:

- Automation components (e.g. industrial robots or machine tools).
- Modular production systems (e.g. learning factories).

Industry 4.0 & 5.0 communication architecture

ADMA TRANSFORMATION AREA

MC 2324 Industry 4.0 & 5.0 communication architecture

Part of the lecture T4WIW9014

Learning Outcome: automation concepts (HMI, OPC-UA, MQTT, MESA, ISA95, VDI5600)

<https://www.heidenheim.dhbw.de/en/home>

Advanced Manufacturing, Smart Manufacturing

Automation

CURRENT
MATURITY (1-5)
LEVEL 4



TARGET
MATURITY
LEVEL (1-5)
LEVEL 5

GENERAL INFORMATION

Course provider	DHBW Heidenheim
Country	Germany
Language	German
Education Subject	Industry 4.0 & 5.0 communication architecture
Learner Profile	A-Levels
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF6
Teaching Methodology	Lecture / Lab
Learning Environment	HVET Centre

INFORMATION ABOUT THE COURSE

Start Date – End Date	01.10.25 – 31.12.25
Workload / Duration	2 ECTS / 50h
Location	DHBW Heidenheim (Baden-Wuerttemberg Cooperative State University)

ESCO skills

Automation technology

<http://data.europa.eu/esco/skill/f4a6e9f7-5cff-46c0-894c-59c20bb78694>

Information architecture

<http://data.europa.eu/esco/skill/1bba98a7-92b9-450b-9235-e0c905f8f3c4>

Selected teaching units are explored in greater depth in the laboratory.

Automation systems – laboratory:

- Automation components (e.g. industrial robots or machine tools).
- Modular production systems (e.g. learning factories).

INTRODUCTION TO CARBON FOOTPRINT

This course provides a basic understanding of what a carbon footprint is, why it matters, and how individuals and industries can measure and reduce their carbon emissions. Students will explore the environmental impact of carbon emissions and learn simple, actionable strategies for lowering their carbon footprint. Topics include energy efficiency, renewable energy, waste reduction, and everyday practices that contribute to carbon reduction. By the end of the course, students will be equipped to take meaningful steps toward reducing their carbon impact.

<https://community.lcamp.eu/catalog-item/gebkim-oiz-introduction-to-carbon-footprint/>

ADMA TRANSFORMATION AREA

ECO FACTORY

ENVIRONMENTALLY FRIENDLY OPERATIONS

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Advise on carbon emissions reduction	Advise on carbon emissions reduction	4
Promote sustainability	Promote sustainability	4

GENERAL INFORMATION

Course provider	GEBKIM OIZ
Country	Türkiye
Language	Turkish
Education Subject	This course introduces the concept of carbon footprint, covering how greenhouse gas emissions are calculated, sources of emissions, and strategies for reduction in personal, corporate, and industrial contexts. It promotes awareness and action toward climate responsibility.
Learner Profile	VET Students
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF 4
Teaching Methodology	Theoretical / Practical
Learning Environment	VET Centre

INFORMATION ABOUT THE COURSE

Workload / Duration	20 Hours
Location	GEBKIM OIZ
Learning activities	Lectures, Practices
Assessment Type	Quizzes and mid-term evaluations, Carbon footprint calculation tasks
Entry requirement	Interest in climate, sustainability, or environmental issues
Admission procedure	Online or in-person application submission

Introduction to Collaborative Robotics

ADMA TRANSFORMATION AREA

Provide basic knowledge of collaborative-robotics principles, standards and applications, with a focus on safety, basic programming and human-robot integration in production processes.

<https://www.smarttvalley.it/manufacturing/>

Human-Centred Organisation;
Smart Manufacturing; Digital
Factory

Industrial robotics · Collaborative robots (cobots) · ISO 10218-1/2 ·
ISO/TS 15066 · Human-robot collaboration · Force sensing ·
Machine vision · Cobot programming · Risk assessment

CURRENT
MATURITY
LEVEL 1



TARGET
MATURITY
LEVEL 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Human-robot interaction	http://data.europa.eu/esco/skill/9136cbf1-7916-4f1c-bc9a-0318ee1d6016	2
Interpret collaborative-robotics paradigm	http://data.europa.eu/esco/skill/e87ec79a-c9ff-46f5-84fa-7a0f394cdf40	2
Configure and program collaborative robots	http://data.europa.eu/esco/skill/abf982c1-6b59-4572-a38c-97d3a6869af4	3
Integrate new products in manufacturing	http://data.europa.eu/esco/skill/8a753714-9a19-4418-9b37-77e79d72c705	3

GENERAL INFORMATION

Course provider	Fondazione Ergo
Country	Italy
Language	Italian / English
Education Subject	Collaborative-robotics principles, standards and applications
Learner Profile	Automation engineers, safety officers, production managers, robotics technicians
Mode of Learning	In-Person/Hybrid
Credential Type	Certificate
EQF Level	5-6
Teaching Methodology	Theoretical / Practical / Practical in CLF
Learning Environment	Classroom, Campus Smartt Valley KIIS

INFORMATION ABOUT THE COURSE

Workload / Duration	8 days – approx
Price	Depending on time schedule and location
Location	Learning Factory, Smartt Valley
Learning activities	Introduction to industrial collaborative robotics and Safety regulations; Enabling sensors and technologies; Cobot programming principles and risk assessment and feasibility analysis
Assessment Type	Multiple choice assessment customized on client needs + situational interview
Entry requirement	Basic knowledge of automation; no prior cobot experience required

The course's content, schedule and location can be adapted to the needs of the recipients.

Installation and Maintenance of Industrial Automation Systems

ADMA TRANSFORMATION AREA

Through this course, the student will learn to assemble and maintain regulation and control systems in industrial installations, applying the required techniques and procedures in each case, ensuring quality standards, complying with the company's occupational and environmental risk prevention plans, and adhering to the applicable regulations in force.

<https://community.lcamp.eu/catalog-item/installation-and-maintenance-of-industrial-automation-systems/>

Digital Factory, Advanced Manufacturing Technologies

Automation, maintenance

CURRENT MATURITY
LEVEL (1-5)

3



TARGET MATURITY
LEVEL (1-5)

4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Install automation components	http://data.europa.eu/esco/skill/818c2b89-1335-4443-ada7-e1046862e273	3
Maintain industrial equipment	http://data.europa.eu/esco/skill/3e4cdaee-740c-4754-9135-466362bbd22e	3
Read technical datasheet	http://data.europa.eu/esco/skill/651675ef-d203-4ba9-bde0-c4fb8a2f3ef3	2
Perform maintenance on installed equipment	http://data.europa.eu/esco/skill/79aa4ec0-399d-432e-aae8-7a390ce89bcc	2

GENERAL INFORMATION

Course provider	CIFP ZORNOTZA LHII
Country	Basque Country / Spain
Language	Spanish
Education Subject	Installation of equipment and elements of industrial automation systems. Commissioning of industrial automation systems. Prevention of occupational and environmental hazards in the assembly and maintenance of industrial automation systems. Preventive maintenance of industrial automation systems Fault diagnosis and corrective maintenance of industrial automation systems
Learner Profile	Individuals interested in working as maintenance technicians in the field of industrial automation.
Mode of Learning	In Person
Credential Type	Microcredential Course - Professional Certificate (Level 2)
EQF Level	4
Teaching Methodology	Theoretical / Practical / Practical in CLF

INFORMATION ABOUT THE COURSE

Workload / Duration	390 Hours
Location	CIFP ZORNOTZA LHII - Zornotza (Basque Country)
Entry requirement	Title of Bachiller / Certificate of professionalism of level 2 or level 1 of the same family and professional area / Academic requirement of access to the higher VET degree or pass the corresponding entrance tests / Entrance test to the university for older than 25 years and/or of 45 years / In accordance with the regulations, training knowledge or professional knowledge sufficient to take the training with advantage.

Installation and maintenance of collaborative robots 'COBOTS'

ADMA TRANSFORMATION AREA

The course is designed to provide participants with a comprehensive understanding of the installation, operation, and maintenance of collaborative robots, commonly known as cobots. As automation technologies continue to evolve, cobots have become essential in enhancing productivity and efficiency across various industries by working alongside human operators safely and effectively.

<https://community.lcamp.eu/catalog-item/installation-and-maintenance-of-collaborative-robots-cobots/>

Digital Factory, Advanced Manufacturing Technologies

Robot, cobot, automation

CURRENT MATURITY
LEVEL (1-5)

3



TARGET MATURITY
LEVEL (1-5)

4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Robotics	http://data.europa.eu/esco/skill/e87ec79a-c9ff-46f5-84fa-7a0f394cdf40	3
Assemble robots	http://data.europa.eu/esco/skill/7ffae77a-93ce-40a3-af99-fae5729e8b15	3
Maintain robotic equipment	http://data.europa.eu/esco/skill/7341904f-5913-470c-8c53-bc832df248ec	3
Manage health and safety standards	http://data.europa.eu/esco/skill/44e2c4c4-9fd2-42d4-a133-d81360ded4bc	3

GENERAL INFORMATION

Course provider	IMH CAMPUS
Country	BASQUE COUNTRY – SPAIN
Language	SPANISH
Education Subject	Integrate and maintain collaborative robots “COBOTS” in automated installations, in conditions of quality and safety for people, machines and the environment.
Learner Profile	People who wish to acquire knowledge of programming, integration and maintenance of Cobots collaborative robots.
Mode of Learning	Online
Credential type	Microcredential
EQF Level	5

INFORMATION ABOUT THE COURSE

Workload / Duration	12 Hours
Price	190€
Location	Elgoibar (Spain)

Internet of Things: Raspberry and Arduino

ADMA TRANSFORMATION AREA

In recent years, IoT has become one of the most important technologies of the 21st century. Now that we can connect everyday objects to the Internet through embedded devices, seamless communication between people, processes and things is possible.

<https://www.lhusurbil.eus/web/Default.aspx?lng=EU>

Advanced Manufacturing Technologies, Digital Factory, Human Centred Organization

IoT, automation, machine communication

CURRENT
MATURITY (1-5)
: 4



TARGET
MATURITY
LEVEL (1-5): 5

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Apply internet of things (IoT)	https://esco.ec.europa.eu/en/skill/e4b32a5b-989b-4a62-a4e3-24371f3fe3ac	4
Integrate embedded systems	https://esco.ec.europa.eu/en/skill/8b9a8bb7-3f7a-43e1-bc7e-ec1e4eaa7e8e	5
Implement machine to machine communication	https://esco.ec.europa.eu/en/skill/6b27e8da-8895-4b45-a9de-8f9c949f7eac	5
Work with smart devices	https://esco.ec.europa.eu/en/skill/bcbf2c6e-b1df-4424-89c4-2372bda7f327	4

GENERAL INFORMATION

Course provider	CIFP Usurbil LHII
Country	Basque Country/ Spain
Language	Spanish
Learner Profile	Unemployees and professionals seeking to enhance their skills in networking and programming, and individuals looking to gain practical experience with Raspberry Pi and related technologies.
Mode of Learning	In Person
Credential Type	Microcredential Course
EQF Level	EQF 5
Teaching Methodology	Theoretical / Practical / Practical in CLF

INFORMATION ABOUT THE COURSE

Workload / Duration	100 hours
Price	Free
Location	Usurbil, Basque Country

Introduction to Automation Systems

ADMA TRANSFORMATION AREA

MC 2321 Introduction to Automation Systems

Part of the lecture T4WIW9014

Learning Outcome: Automation fundamentals (definitions, standards for implementation). Analysis of technical systems (system description and approach).

<https://www.heidenheim.dhbw.de/en/home>

Advanced Manufacturing, Smart Manufacturing

Automation, technical systems

CURRENT
MATURITY (1-5)
LEVEL 4



TARGET
MATURITY
LEVEL (1-5)
LEVEL 5

GENERAL INFORMATION

Course provider	DHBW Heidenheim
Country	Germany
Language	German
Education Subject	Introduction to Automation Systems
Learner Profile	A-Levels
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF6
Teaching Methodology	Lecture
Learning Environment	HVET Centre

INFORMATION ABOUT THE COURSE

Start Date – End Date	01.10.25 – 31.12.25
Workload / Duration	1 ECTS / 25h
Location	DHBW Heidenheim (Baden-Wuerttemberg Cooperative State University)

ESCO skills

Automation technology

<http://data.europa.eu/esco/skill/f4a6e9f7-5cff-46c0-894c-59c20bb78694>

Introduction to Digital Twin Technology

ADMA TRANSFORMATION AREA

This training provides basic knowledge in how digital copies from physical systems are used for simulates and optimization.

<https://community.lcamp.eu/catalog-item/production-philosophy/>

Digital Factory

Digital Twins

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Digital Twin Technology	http://data.europa.eu/esco/skill/737f8895-46df-4283-8f38-13f3f0fc3b77	2
Digital Systems	http://data.europa.eu/esco/skill/397da142-ab35-48fe-b154-7c38f447adfb	2

GENERAL INFORMATION

Course provider	Curt Nicolin Gymnasiet
Country	Sweden
Language	Swedish
Education Subject	Production Philosophy
Learner Profile	EQF 5
Mode of Learning	In Person
Credential Type	Certificate of Completion
EQF Level	EQF 5
Teaching Methodology	Theoretical, Practical
Learning Environment	Classroom, Educational Lab

INFORMATION ABOUT THE COURSE

Start Date – End Date	According to agreement
Workload / Duration	4 days
Schedule information	4 days training
Location	Finspång Sweden
Learning activities	Theoretical practice and practical training in software
Assessment Type	Practical test
Entry requirement	Technical studies or similar completed EQF 4
Admission procedure	https://www.cng.se/

Introduction to Robotics

ADMA TRANSFORMATION AREA

MC 2334 Introduction to Robotics

Part of the lecture T3M30306

Learning Outcome: Robotics systems and industrial robots.

<https://www.heidenheim.dhbw.de/en/home>

Advanced Manufacturing, Smart Manufacturing

Robotics, industrial robots

CURRENT
MATURITY (1-5)
LEVEL 4



TARGET
MATURITY
LEVEL (1-5)
LEVEL 5

GENERAL INFORMATION

Course provider	DHBW Heidenheim
Country	Germany
Language	German
Education Subject	Introduction to Robotics
Learner Profile	A-Level
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF6
Teaching Methodology	Lecture
Learning Environment	HVET Centre

INFORMATION ABOUT THE COURSE

Start Date – End Date	01.01.26 – 01.04.26
Workload / Duration	1 ECTS / 25h
Location	DHBW Heidenheim (Baden-Wuerttemberg Cooperative State University)

ESCO Skills

Robotics

<http://data.europa.eu/esco/skill/e87ec79a-c9ff-46f5-84fa-7a0f394cdf40>

Robotic components

<http://data.europa.eu/esco/skill/7a950986-27fe-4b6c-adf3-88f211e77019>

INTRODUCTION OF THE PROGRAMMING OF UR COBOTS

The Introduction to the Programming of UR Cobots course provides learners with foundational skills to configure, calibrate, and program Universal Robots collaborative robots. Participants will use the PolyScope interface to develop simple programs, execute basic movements, and perform pick & place operations with tools and sensors. The training focuses on practical, hands-on tasks to ensure participants can confidently operate UR cobots in real industrial environments.

ADMA TRANSFORMATION AREA

Advanced Manufacturing
Technologies, Smart
Manufacturing

Automatization

CURRENT MATURITY
LEVEL (1-5)

2



TARGET MATURITY
LEVEL (1-5)

3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
working with computers	http://data.europa.eu/esco/skill/39499028-35bf-4d69-9275-fb98902ed88b	2
programming computer systems	http://data.europa.eu/esco/skill/d6e4373a-ef2c-4b64-9dc6-4140846f6609	2
maintain robotic equipment	http://data.europa.eu/esco/skill/7341904f-5913-470c-8c53-bc832df248ec	2

GENERAL INFORMATION

Course provider	Tolosaldea LHII
Country	Spain
Language	English
Education Subject	Robotics
Learner Profile	VET workers
Mode of Learning	In Person
EQF Level	4
Teaching Methodology	Practical
Learning Environment	Vocational learning classroom

INFORMATION ABOUT THE COURSE

Workload / Duration	2 Days
Location	Tolosaldea LHII
Learning activities	Lectures, guided practises and demonstrations.
Assessment Type	Exercises/practical assignments
Entry requirement	Electricity or Electronics Vocational Training Program or Engineering.

Industrial Robot Programming. Level 1 (ABB, FANUC, KUKA)

ADMA TRANSFORMATION AREA

Using robots improve the production and reduce time. It helps getting better work conditions. The objectives of the course are: Achieve robotics knowledges, Know robot safety, I/O, Calibration, Condition comands, Wait comands.

Advanced Manufacturing Technologies /
Digital Factory / Smart Manufacturing /
End-to-end Customer Focused
Engineering

Robot, programming, ABB,
FANUC, KUKA, AUTOMATIZATION

CURRENT MATURITY
LEVEL (1-5)

3



TARGET MATURITY
LEVEL (1-5)

4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Robotics	http://data.europa.eu/esco/skill/e87ec79a-c9ff-46f5-84fa-7a0f394cdf40	2
Operate industrial equipment	http://data.europa.eu/esco/skill/7c632656-361e-4db1-8d69-b9f85d6be0d0	2
Use automatic programming	http://data.europa.eu/esco/skill/7d10fcb2-b368-48ab-996b-7c9fafcf68ed	2
Manage health and safety standards	http://data.europa.eu/esco/skill/44e2c4c4-9fd2-42d4-a133-d81360ded4bc	3
Interpret technical texts	http://data.europa.eu/esco/skill/85c11255-469f-41bd-a6d1-382bc4a87783	2

GENERAL INFORMATION

Course provider	IMH CAMPUS
Country	Basque Country / Spain
Language	English / Spanish
Education Subject	Introduction to industrial robots. Basic operation of the robot. Navigation through the programming unit. Program structure. Editing and execution of the program.
Mode of Learning	In Person

INFORMATION ABOUT THE COURSE

Workload / Duration	24 Hours
Location	IMH CAMPUS (Elgoibar)

Industrial Robot Programming. Level 2 (ABB, FANUC, KUKA)

ADMA TRANSFORMATION AREA

Using robots improve the production and reduce time. It helps getting better work conditions.

The objectives of the course are: To know how to program an industrial robot, to perform any automation process, to program interruption routines, to train the attendees to program industrial robots from the operator.

Advanced Manufacturing Technologies /
Digital Factory / Smart Manufacturing /
End-to-end Customer Focused
Engineering

ROBOT, PROGRAMMING, ABB,
FANUC, KUKA, AUTOMATIZATION

CURRENT MATURITY
LEVEL (1-5)

4



TARGET MATURITY
LEVEL (1-5)

5

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Robotics	http://data.europa.eu/esco/skill/e87ec79a-c9ff-46f5-84fa-7a0f394cdf40	3
Operate industrial equipment	http://data.europa.eu/esco/skill/7c632656-361e-4db1-8d69-b9f85d6be0d0	3
Use automatic programming	http://data.europa.eu/esco/skill/7d10fcb2-b368-48ab-996b-7c9fafcf68ed	3
Manage health and safety standards	http://data.europa.eu/esco/skill/44e2c4c4-9fd2-42d4-a133-d81360ded4bc	4
Interpret technical texts	http://data.europa.eu/esco/skill/85c11255-469f-41bd-a6d1-382bc4a87783	3

GENERAL INFORMATION

Course provider	IMH CAMPUS
Country	Basque Country / Spain
Language	English / Spanish
Education Subject	Data type structures. Program flow instructions. Advanced movement instructions. Time control. Interrupt routines. Creation of forbidden zones.
Mode of Learning	In Person

INFORMATION ABOUT THE COURSE

Workload / Duration	25 Hours
Location	IMH CAMPUS (Elgoibar)
Entry requirement	Industrial Robot Programming course (level 1) completed or similar knowledge

Internet of Things (IoT)

ADMA TRANSFORMATION AREA

MC 2325 Internet of Things (IoT)

Part of the lecture T4WIW9014

Learning Outcome: Current topics in automation, including the latest developments and trends in the field (e.g. IoT).

<https://www.heidenheim.dhbw.de/en/home>

Advanced Manufacturing, Smart Manufacturing

Automation

CURRENT
MATURITY (1-5)
LEVEL 4



TARGET
MATURITY
LEVEL (1-5)
LEVEL 5

GENERAL INFORMATION

Course provider	DHBW Heidenheim
Country	Germany
Language	German
Education Subject	IoT
Learner Profile	A-Level
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF6
Teaching Methodology	Lecture
Learning Environment	HVET Centre

INFORMATION ABOUT THE COURSE

Start Date – End Date	01.10.25 – 31.12.25
Workload / Duration	2 ECTS / 50h
Location	DHBW Heidenheim (Baden-Wuerttemberg Cooperative State University)

ESCO skills

Internet of Things

<http://data.europa.eu/esco/skill/f049d050-12da-4e40-813a-2b5eb6df6b51>

IoT SENSOR DEVELOPMENT AND LORAWAN NETWORK CONFIGURATION

ADMA TRANSFORMATION AREA

The program presents the basic concepts of developing connected IoT devices for smart cities and the use of modern low-power wireless LoRaWAN technology.

<https://ict-academy.si/usposabljanje/razvoj-senzorja-iot-in-konfiguracija-omrezja-lorawan/>

Smart manufacturing

IoT, LPWAN Technologies, Sensor Configuration, Data Visualization

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Internet of Things	http://data.europa.eu/esco/skill/f049d050-12da-4e40-813a-2b5eb6df6b51	4
Information and communication technologies (icts)	http://data.europa.eu/esco/iscsd-f/06	4

GENERAL INFORMATION

Course provider	University of Ljubljana Faculty of electrical engineering
Country	Slovenia
Language	Slovenian
Education Subject	This educational content covers the fundamentals of IoT devices for smart cities, explores low-power wireless communication technologies like LPWAN (LTE-M, NB-IoT, LoRaWAN, SigFox), and guides through the process of building, configuring, and deploying IoT sensor systems, including server setup and data analysis.
Learner Profile	Adult
Mode of Learning	In Person
Credential Type	Paper based
EQF Level	EQF 5, 6
Teaching Methodology	Theoretical / Practical / Practical in CLF

INFORMATION ABOUT THE COURSE

Start Date – End Date	On demand
Workload / Duration	8 hours
Price	400,00 EUR + VAT
Location	Ljubljana
Learning activities	Practical exercise, training, problem solving
Assessment Type	Practical test
Entry requirement	Advance knowledge in IT

MCRO-250V Lean Fundamental Micro-Credential

ADMA TRANSFORMATION AREA

ADVANCED MANUFACTURING

Lean Business Operations

CURRENT
MATURITY
LEVEL 2

TARGET
MATURITY
LEVEL 4

Lean is an organizational philosophy, and an approach to business, that develops people through respect, training and engagement to facilitate problem solving that drives innovation and productivity. Though Lean methodologies are already common in fields such as manufacturing and supply chain management, every field from healthcare to construction can benefit from this philosophy.

[MCRO 250V Lean Fundamentals Micro-Credential](#)

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
0413 - Lean project management	http://data.europa.eu/esco/skill/da6393d5-a53c-4863-abc7-51f36281d74e	4

GENERAL INFORMATION

Course provider	Camosun College / ProSIT
Country	Canada
Language	English
Education Subject	Business
Learner Profile	College Students
Mode of Learning	Online
Credential Type	Micro-Credential
EQF Level	3
Teaching Methodology	Theoretical
Learning Environment	Online

INFORMATION ABOUT THE COURSE

Start Date – End Date	Self-paced, maximum length one year
Workload / Duration	One Year
Price	\$40.00 CAD
Location	Camosun College
Learning activities	Lectures and analysis
Assessment Type	Exams
Entry requirement	None
Admission procedure	Apply online; no prerequisites

LEAN Introduction

ADMA TRANSFORMATION AREA

This training is an introduction to LEAN. It provides basic principles like value flows, waste, Kaizen.

<https://community.lcamp.eu/catalog-item/production-philosophy/>

Human Centred Organisation

LEAN, TPS, 5S, Kaizen

CURRENT
MATURITY
LEVEL 1



TARGET
MATURITY
LEVEL 2

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Continuous improvement philosophies	http://data.europa.eu/esco/skill/0550431f-9c8b-4204-9c45-59bc5feacf06	2

GENERAL INFORMATION

Course provider	Curt Nicolín Gymnasiet
Country	Sweden
Language	Swedish
Education Subject	Production Philosophy
Learner Profile	EQF 5
Mode of Learning	In Person
Credential Type	Certificate of Completion
EQF Level	EQF 5
Teaching Methodology	Theoretical, Practical
Learning Environment	Classroom, Educational Lab

INFORMATION ABOUT THE COURSE

Start Date – End Date	According to agreement
Workload / Duration	4 days
Schedule information	4 days training
Location	Finspång Sweden
Learning activities	Theoretical and practical training
Assessment Type	Theoretical and practical test
Entry requirement	Technical studies or similar completed EQF 4
Admission procedure	https://www.cng.se/

MAKE 3D SLICING SETTINGS

ADMA TRANSFORMATION AREA

Making flow, speed, extrusion width settings in 3d slicing programs.

<https://community.lcamp.eu/catalog-item/make-3d-slicing-settings/>

SMART MANUFACTURING

SMART PROTOTYPING

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
3D printing process	3D printing process	4

GENERAL INFORMATION

Course provider	GEBKIM VET
Country	Türkiye
Language	Turkish
Education Subject	This course teaches learners how to prepare and optimize 3D models for printing by using slicing software. It covers layer settings, infill, support structures, temperature control, and material-specific configurations to ensure high-quality additive manufacturing output.
Learner Profile	VET Students
Mode of Learning	Online / Hybrid / In Person
Credential Type	ECTS
EQF Level	EQF 4
Teaching Methodology	Theoretical / Practical
Learning Environment	VET Centre

INFORMATION ABOUT THE COURSE

Workload / Duration	30 Hours
Location	GEBKIM VET
Learning activities	Lectures, Practices, Lab Work
Assessment Type	Practical slicing tasks and print project, Peer and instructor evaluation of slicing quality
Entry requirement	Basic computer skills and interest in digital design or manufacturing
Admission procedure	Online or in-person application submission

Manufacturing a part using 3D printing (with wire)

ADMA TRANSFORMATION AREA

Using a computer equipped with CAD software and 3D printing software, learners must process files and prepare the necessary file for optimal 3D printing of a part. Learners will develop skills to process CAD files, optimize part geometry, and generate 3D printing-ready files, ensuring accuracy, efficiency, and print quality.

<https://decouverte.mon-ent-occitanie.fr/>

Advanced Manufacturing Technologies

CAD, 3D printing

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Use CAD software	http://data.europa.eu/esco/skill/b34e2ba1-9080-48c9-9b42-ee9192a4d3f1	3
3D modelling	http://data.europa.eu/esco/skill/97965983-0da4-4902-9daf-d5cd2693ef73	3

GENERAL INFORMATION

Course provider	La Découverte
Country	France
Language	French
Education Subject	Manufacturing engineering
Learner Profile	EQF 4
Mode of Learning	In Person
Credential Type	Baccalaureate
EQF Level	EQF 4
Teaching Methodology	Theoretical / Practical / Practical in CLF
Learning Environment	VET Centre

INFORMATION ABOUT THE COURSE

Start Date – End Date	September 2025
Workload / Duration	3 Hours
Location	Lycée La Découverte Decazeville France

Manufacturing process design

ADMA TRANSFORMATION AREA

Design the manufacturing process by machining the chassis plates of the LCAMP CLF's robot

<https://decouverte.mon-ent-occitanie.fr/presentation-du-lycee/nos-filieres/bts-erom-18018.htm>

Advanced Manufacturing Technologies

Manufacturing process, LCAMP robot, CLF

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Planning production processes	http://data.europa.eu/esco/skill/e6eeb84c-ad99-42e2-b883-e6ce338aef59	3
Select material to process	http://data.europa.eu/esco/skill/d55e3866-3ec1-4bbb-b946-2c16696d0dcb	3
Use CAM software	http://data.europa.eu/esco/skill/7a757fa5-9a6f-43ab-9e66-f8f4dba1ffcb	3
Assembling and fabricating products	http://data.europa.eu/esco/skill/b8e142fe-e508-42b1-b037-efebcef3a7	3
Control production	http://data.europa.eu/esco/skill/feceacee-d425-4e73-821a-02dfb85084db	2

GENERAL INFORMATION

Course provider	Lycée La Découverte
Country	France
Language	French
Education Subject	Manufacturing processes
Learner Profile	Learners EQF 5 involved in LCAMP's CLF i BTS CPRP
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	5
Teaching Methodology	Practical in CLF
Learning Environment	CLF

INFORMATION ABOUT THE COURSE

Start Date – End Date	Decembre 2025 – January 2026
Workload / Duration	2 months
Location	Lycée La Découverte Decazeville France
Learning activities	Manufacturing process design course + Practical work (design and implement the manufacturing process of the chassis
Assessment Type	Summative assesent : manufacturing document and oal presentation of the manufacturing process
Admission procedure	Be registered in theBTS CPRP programme

MENG-141 Manufacturing Processes 1

Students will be introduced to manufacturing processes and basic measuring tools. The safe and effective use of common manufacturing tools is emphasized. Students then work with machine and hand tools to manufacture a project set by the instructor. Only open to students in the Mechanical Engineering Technology and Mechanical Engineering Technology Access programs.

[MENG 141 - Manufacturing Processes 1 - Modern Campus Catalog™](#)

ADMA TRANSFORMATION AREA

ADVANCED MANUFACTURING

Manufacturing Tools

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
K072 Manufacturing and Processing	http://data.europa.eu/esco/iscde-f/072	4
K071 Engineering and Engineering Trades	http://data.europa.eu/esco/iscde-f/071	4

GENERAL INFORMATION

Course provider	Camosun College
Country	Canada
Language	English
Education Subject	Mechanical Engineering
Learner Profile	College Students
Mode of Learning	In Person
Credential Type	College Diploma
EQF Level	4
Teaching Methodology	Practical
Learning Environment	In Classroom

INFORMATION ABOUT THE COURSE

Start Date – End Date	Four-month term
Workload / Duration	75 Hours
Price	\$562.38 CAD
Location	Camosun College
Learning activities	Lectures, analysis, and direct experience
Assessment Type	Papers / Exams / Physical Tests
Entry requirement	Requires prerequisite course from Camosun College
Admission procedure	Apply as part of Camosun mechanical engineering degree

MENG-141 Manufacturing Processes 2

ADMA TRANSFORMATION AREA

ADVANCED MANUFACTURING

Manufacturing Processes

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

Students will be introduced to automated machine tools including CNC lathes and milling machines. Using software, students will specify tools, set speeds and feeds and generate toolpaths to create machined parts. Work holding methods and tool selection will be reviewed. Use of laser cutter and 3D printing will also be explored. Only open to students in the Mechanical Engineering Technology program.

[MENG 244 - Manufacturing Processes 2/CAM - Modern Campus Catalog™](#)

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
K071 – Engineering and Engineering Trades	http://data.europa.eu/esco/iscde-f/071	4
S5.7.0 – Operate Machine Tools	http://data.europa.eu/esco/skill/f5750c05-7b15-4e0b-8591-f9a1bb95aaac	4

GENERAL INFORMATION

Course provider	Camosun College
Country	Canada
Language	English
Education Subject	Mechanical Engineering
Learner Profile	College Students
Mode of Learning	In Person
Credential Type	College Diploma
EQF Level	4
Teaching Methodology	Practical
Learning Environment	In Classroom

INFORMATION ABOUT THE COURSE

Start Date – End Date	Four-month term
Workload / Duration	75 Hours
Price	\$551.34 CAD
Location	Camosun College
Learning activities	Lectures, analysis, and direct experience
Assessment Type	Papers / Exams / Physical Tests
Entry requirement	Requires prerequisite course from Camosun College
Admission procedure	Apply as part of Camosun mechanical engineering degree

MANUAL ASSEMBLY TECHNIQUES

ADMA TRANSFORMATION AREA

This course focuses on the fundamental skills required for manual assembly in industrial and manufacturing environments. It covers essential techniques, tools, and best practices for assembling mechanical and electronic components by hand.

https://lcamp.eu/wp-content/uploads/sites/53/2025/05/PPT_LFs-in-partners-labs2025_LCAMP-3.pdf (slide 38)

HUMAN-CENTERED
ORGANIZATION

ERGONOMIC PRACTICES AND
SAFETY FOCUS

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Apply Assembly Techniques	Apply Assembly Techniques	4

GENERAL INFORMATION

Course provider	GEBKIM VET
Country	Türkiye
Language	Turkish
Learner Profile	VET Students
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF 4
Teaching Methodology	Theoretical / Practical
Learning Environment	VET Centre

INFORMATION ABOUT THE COURSE

Workload / Duration	12 Hours
Location	GEBKIM VET
Learning activities	Lecture, exercise, discussion, laboratory work
Assessment Type	Self-assessment learning diaries or portfolios – test reflection skills
Entry requirement	Basic mechanical or technical skills, Manual dexterity and visual-motor coordination
Admission procedure	Online or in-person application submission

ADMA TRANSFORMATION AREA

The Dual University Master's Degree in Digital Manufacturing responds to the new reality of companies within the framework of Industry 4.0, in which companies need professionals with a global vision of the Digital Factory, mastery of the associated technologies and capacity to lead the changes that the new industrial revolution implies in business models.

Digital Factory, Smart Manufacturing

Industry 4.0

CURRENT MATURITY
LEVEL (1-5)

3



TARGET MATURITY
LEVEL (1-5)

4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Internet of Things	http://data.europa.eu/esco/skill/f049d050-12da-4e40-813a-2b5eb6df6b51	3
Analyse Big Data	http://data.europa.eu/esco/skill/47a49cd6-097d-457a-9f7b-c290c14930d5	2
Perform data Mining	http://data.europa.eu/esco/skill/4216e465-7baa-4884-a241-54b197bb9278	2
Run simulations	http://data.europa.eu/esco/skill/4216e465-7baa-4884-a241-54b197bb9278	3

GENERAL INFORMATION

Course provider	IMH Campus
Country	Spain
Language	Spanish/English
Education Subject	Multidisciplinary training and preparation to provide solutions to the challenges posed by the different technologies of Industry 4.0 from a global perspective.
Learner Profile	Graduates in engineering or related fields. Who wish to broaden their skills and training in the area of Digital Manufacturing. Working professionals who wish to promote towards 5.0 profiles. Who wish to specialise in order to lead digitalisation projects within their own company.
Mode of Learning	In Person
Credential Type	Master's degree
Teaching Methodology	Dual

INFORMATION ABOUT THE COURSE

Workload / Duration	2250 Hours
Price	12700 €
Location	ELGOIBARKO INGENIARITZA DUALAREN ESKOLA (UPV/EHU) / IDEKO (Elgoibar) / TECNALIA (Donostia eta Zamudio) / VICOMTECH (Donostia) / TEKNIKER (Eibar)
Learning activities	Comprehensive Engineering Solutions / Systemic Organizational Processes / Research Methodology and Project /Leadership for New Business Models / Data Mining, Big Data, and AI / Applied Industrial Robotics / Industrial Technologies / Connected Industrial Systems

MDC – Method Design Concept

Methods Design Concept (MDC) is an industrial-engineering methodology for redesigning production processes, aimed at boosting productivity (Method, Performance, Utilisation) and, in turn, company profitability. The course equips participants with practical tools to calculate and realise concrete improvements along the production flow.

<https://www.smarttvalley.it/manufacturing/>

ADMA TRANSFORMATION AREA

Advanced Manufacturing Technologies; Smart Manufacturing; Value-Chain-Oriented Open Factory

MDC; SMED; Changeover standardisation; IED; OED; Time study & motion analysis; KPI monitoring; Process optimisation

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Planning production processes	http://data.europa.eu/esco/skill/e6eeb84c-ad99-42e2-b883-e6ce338aef59	3
Quality and cycle time optimisation	http://data.europa.eu/esco/skill/3b3b7373-220a-4287-87cf-e24a208b63c6	2
Design changeover processes using SMED standards	http://data.europa.eu/esco/skill/7af76a2b-6bba-4350-9bfa-980e50c98481	3
Monitor productivity KPIs	http://data.europa.eu/esco/skill/8dcbcabbe-09f7-4d11-940d-125af57bbc40	2

GENERAL INFORMATION

Course provider	Fondazione Ergo
Country	Italy
Language	Italian / English
Education Subject	Redesign and improvement of production processes
Learner Profile	Process manager, Management engineer, team leader
Mode of Learning	Hybrid
Credential Type	Certificate
EQF Level	6
Teaching Methodology	Theoretical / Practical / Practical in CLF
Learning Environment	Classroom, Experience lab with workstations

INFORMATION ABOUT THE COURSE

Workload / Duration	ECTS / Hours / Days / Weeks
Schedule information	3 days (24 h) – approx.
Price	Depending on time schedule and location
Location	Learning Factory, Smartt Valley
Learning activities	Lectures, SMED lab exercises
Assessment Type	Multiple choice assessment customized on client needs + situational interview
Entry requirement	Basic Lean-manufacturing and production-process knowledge

The course's content, schedule and location can be adapted to the needs of the recipients.

MEASUREMENT AND CONTROL OF PHYSICAL VARIABLES

ADMA TRANSFORMATION AREA

Measures and controls pressure, temperature, flow, level.

<https://community.lcamp.eu/catalog-item/measurement-and-control-of-physical-variables/>

ADVANCED MANUFACTURING
TECHNOLOGIES

SMART SENSORS

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Use measurement instruments	Use measurement instruments	4

GENERAL INFORMATION

Course provider	GEBKIM VET
Country	Türkiye
Language	Turkish
Education Subject	This course focuses on the measurement, monitoring, and control of key physical variables such as temperature, pressure, flow, level, and speed in industrial systems using sensors, transducers, and control devices.
Learner Profile	VET Students
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF 4
Teaching Methodology	Theoretical / Practical / Practical in CLF
Learning Environment	VET Centre

INFORMATION ABOUT THE COURSE

Workload / Duration	80 Hours
Location	GEBKIM VET
Learning activities	Lectures, Practices, Lab Work
Assessment Type	Lab performance, Design and implementation of a control system
Entry requirement	Motivation for working in technical and industrial settings
Admission procedure	Online or in-person application submission

BUS 232 – Operations Management

ADMA TRANSFORMATION AREA

ADVANCED MANUFACTURING

OPERATIONS MANAGEMENT

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

This course provides a detailed look at Operations Management and its practical application to service and manufacturing operations. Numerous cases and off-campus tours are used. Topics include: supply chain management, forecasting, location selection, allocating resources, designing work systems, capacity planning, scheduling, quality management, inventory control and transportation.

[BUS 232 - Operations Management - Modern Campus Catalog™](#)

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
S1.2 Liasing and Network	http://data.europa.eu/esco/skill/b76cd1e5-d5e7-464a-b7bb-4164d3616452	4
S2.1.0 Conducting studies, investigations and examinations	http://data.europa.eu/esco/skill/8fde007e-ea4c-48c2-84c5-752834acd31d	4
S4.0 – Management Skills	http://data.europa.eu/esco/skill/c1a13ee0-b00d-4cfa-a22c-20d284e398b0	4

GENERAL INFORMATION

Course provider	Camosun College
Country	Canada
Language	English
Education Subject	Business
Learner Profile	College Students
Mode of Learning	In Person
Credential Type	College Diploma
EQF Level	4
Teaching Methodology	Theoretical
Learning Environment	In Classroom

INFORMATION ABOUT THE COURSE

Start Date – End Date	Four-month term
Workload / Duration	45 Hours
Price	\$290.25 CAD
Location	Camosun College
Learning activities	Lectures, case studies, and analysis
Assessment Type	Papers / Exams / Case Studies
Entry requirement	Requires prerequisite course from recognized post-secondary institution
Admission procedure	Apply as part of Camosun business degree

PERFORMING A SCIENTIFIC RESEARCH

ADMA TRANSFORMATION AREA

The course's aim is to gain, correct or improve knowledge about phenomena by using scientific methods and techniques, based on empirical or measurable observations.

<https://community.lcamp.eu/catalog-item/gebkim-vet-performing-a-scientific-research/>

HUMAN-CENTERED
ORGANIZATION

SOCIAL IMPACT

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Perform scientific research	Perform scientific research	4

GENERAL INFORMATION

Course provider	KPDoNE
Country	Türkiye
Language	Turkish
Education Subject	This course introduces students to the principles and methods of scientific research, including how to design, conduct, document, and present a research study using systematic inquiry and academic ethics.
Learner Profile	VET Students and Teachers
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF 4
Teaching Methodology	Theoretical / Practical
Learning Environment	VET Centre

INFORMATION ABOUT THE COURSE

Workload / Duration	42 Hours
Location	KPDoNE
Learning activities	Defining research problems and hypotheses, Data collection (observation, experiment, survey), Data analysis (basic statistics, charts)
Assessment Type	Individual or group research project, Oral or visual presentation
Entry requirement	Interest in inquiry, analysis, and technical/scientific communication
Admission procedure	Online or in-person application submission

PNEUMATICS BASIC TRAINING

ADMA TRANSFORMATION AREA

Course short description (+ URL): Acquire the physical foundations of pneumatics, understand the operation of pneumatic components, design pneumatic control systems, operate pneumatic components, maintain pneumatic systems.

https://www.tscmb.si/wp-content/uploads/2023/09/STRUKTURA-PNEVMATIKA_osnovni-seminar.pdf

Smart manufacturing

Pneumatics, Industrial Automation, control components

CURRENT
MATURITY
LEVEL 1



TARGET
MATURITY
LEVEL 2

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Pneumatics	http://data.europa.eu/esco/skill/bf419e00-8548-491a-a06f-d72ab439df2f	2
Install pneumatic systems	http://data.europa.eu/esco/skill/82da5835-1759-4eeb-9d58-a834ee80384e	2

GENERAL INFORMATION

Course provider	TŠC Maribor
Country	Slovenia
Language	Slovenian
Education Subject	Engineering
Learner Profile	Students, workers
Mode of Learning	In Person
Credential Type	Paper based
EQF Level	5
Teaching Methodology	Theoretical / Practical
Learning Environment	School laboratory

INFORMATION ABOUT THE COURSE

Start Date – End Date	March, April, May 2025
Workload / Duration	4h/day, 2 times a week (24 hours total)
Price	380,00 EUR + VAT (incl. welder certification)
Location	Zolajeva ulica 12, 2000 Maribor, Slovenia
Learning activities	Lecture, exercise, discussion, laboratory work
Assessment Type	Self-assessment learning diaries or portfolios – test reflection skills
Entry requirement	Persons who design, construct and manufacture devices with pneumatic components and service and maintain pneumatic systems, and persons who wish to increase their knowledge for their personal development and improve their competitiveness in the labor market.
Admission procedure	https://www.tscmb.si/wp-content/uploads/2025/02/VABILO_PNEVMATIKA_OSNOVNI_februar_2025.pdf

Predictive maintenance

ADMA TRANSFORMATION AREA

This course provides the foundational understanding of predictive maintenance and its role in modern industry. Learners are introduced to the basic principles of condition monitoring, data collection, and analysis used to anticipate equipment failures.

<https://3tindustry40training.eu/course/view.php?id=5>

Advanced Manufacturing
Technologies

Maintenance

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Maintenance and repair	http://data.europa.eu/esco/skill/6cb9c23b-e3bc-4917-b588-26c4cef9d920	1
Build predictive models	http://data.europa.eu/esco/skill/38d49d88-9069-467b-b29e-3cae739bdd4d	1

GENERAL INFORMATION

Course provider	3TIndustry 4.0
Country	France, Spain and Germany
Language	English
Education Subject	Maintenance
Mode of Learning	Online
Credential Type	None
EQF Level	None
Teaching Methodology	Theoretical
Learning Environment	E Learning

INFORMATION ABOUT THE COURSE

Start Date – End Date	Not applicable
Workload / Duration	3 Hours
Price	Free
Location	Online
Learning activities	Theoretical
Assessment Type	Quiz
Entry requirement	None
Admission procedure	Registration to the platform

Problem Solving

ADMA TRANSFORMATION AREA

The course offers the opportunity to explore and enhance your creative potential, while learning to balance divergent and convergent thinking in a dynamic and effective way.

You will also gain hands-on experience with tools and techniques designed to help you generate creative ideas and develop innovative solutions to real-world challenges.

<https://www.rolld.com/academy-offering/>

Human Centred Organization

Teamwork

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Solving problems	http://data.europa.eu/esco/skill/S1.9.0	4

GENERAL INFORMATION

Course provider	Rold Academy
Country	Italy
Language	Italian (but it can also be delivered in English)
Education Subject	Problem Solving
Learner Profile	Roles involved in business organization (HR, Managers, Area Managers, Team Leaders)
Mode of Learning	In Person
Credential Type	Certificate
EQF Level	5
Teaching Methodology	Theoretical and Practical
Learning Environment	MIND (Milan Innovation District), but it can also be arranged at company premises

INFORMATION ABOUT THE COURSE

Start Date – End Date	According to requests
Workload / Duration	8 hours (4h per day)
Schedule information	Possibility to arrange specific courses
Price	800 €
Location	Milan (Italy)
Learning activities	Understanding the process of Applied Creativity and Creative Problem Solving (CPS) and how to use it to overcome creative challenges Experiencing the dynamic balance between divergent and convergent thinking, and learn how to apply it to achieve creative outcomes Being able to identify personal traits (Creative Thinking Preferences) and environmental factors (Creative Environment), as well as behaviors and attitudes that can enhance or inhibit creativity
Assessment Type	Questionnaire
Entry requirement	No entry requirement
Admission procedure	Interview

Course schedules and content can be customized, and additional follow-up meetings and continuous learning activities activities can be planned.

Process Automation with PLC, HMI and electro pneumatic systems

ADMA TRANSFORMATION AREA

This intensive training module focuses on the automation of industrial processes using PLCs, HMIs, and electropneumatic systems. The course combines theoretical lessons, hands-on workshops, and real-life challenges to develop technical skills in programming, commissioning, and troubleshooting automated systems. Participants will work in international teams to control FESTO stations, apply GRAFCET and KOP programming, and complete a challenge-based project simulating real industrial tasks. The module promotes collaborative learning and includes cultural activities to enrich the international experience.

Digital Factory, Advanced Manufacturing Technologies

Automation, PLC, HMI, electropneumatic

CURRENT MATURITY
LEVEL (1-5)

3

TARGET MATURITY
LEVEL (1-5)

4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Programmable logic controller	http://data.europa.eu/esco/skill/6468e5fb-f3be-4025-87be-4b6556755c61	3
Use automatic programming	http://data.europa.eu/esco/skill/7d10fcb2-b368-48ab-996b-7c9fafcf68ed	3
Install automation components	http://data.europa.eu/esco/skill/818c2b89-1335-4443-ada7-e1046862e273	3
Human-robot collaboration	http://data.europa.eu/esco/skill/0f5374e3-0b9b-4b16-af7a-49654ce0bb15	2

GENERAL INFORMATION

Course provider	CIFP Armeria eskola LHII
Country	Basque country – Spain
Language	English
Education Subject	PLC programming
Learner Profile	Automation students
Mode of Learning	In Person
EQF Level	4/5
Teaching Methodology	Theoretical / Practical / Practical in CLF
Learning Environment	Workshop

INFORMATION ABOUT THE COURSE

Workload / Duration	60 Hours
Location	CIFP Armeria eskola LHII
Learning activities	Identify and wire PLC inputs and outputs, including PNP/NPN configurations. Sequential control, design and simulate GRAFCET diagrams for basic automation sequences. Use TIA Portal, program PLCs with ladder logic (KOP). Simulate and debug programs, practicing fault detection, signal tracing, and testing system behavior in manual and automatic modes. Work on FESTO workstations, creating I/O tables, GRAFCET diagrams, and full PLC programs.
Assessment Type	Final project
Entry requirement	Enrolment in automation cycle EQF 4/5

This course delivers a thorough grounding in advanced data-analysis and AI methods (Process Mining, Machine Learning, Predictive/Prescriptive Analytics, RPA and dashboards) to optimize processes across production, supply chain, maintenance and customer service. Participants will learn to deploy digital tools for real-time KPI monitoring and rapid issue detection.

<https://www.smarttvalley.it/manufacturing/>

ADMA TRANSFORMATION AREA

Digital Factory; Advanced Manufacturing Technologies; Smart Manufacturing

Business process mapping · Process Mining · Machine Learning · Predictive Maintenance · Prescriptive Analytics · Demand Forecasting · RPA & Hyperautomation · Dashboards & Real-time KPI monitoring · IoT sensor integration

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Analyse and map business processes	http://data.europa.eu/esco/skill/56042303-972b-41be-9310-58467599ff7e	3
Use advanced data-analysis and mining tools	http://data.europa.eu/esco/skill/4216e465-7baa-4884-a241-54b197bb9278	2
Develop predictive and prescriptive models	http://data.europa.eu/esco/skill/e2887d71-8ff4-4188-9926-22bdaefa7713	4
Build interactive dashboards for real-time KPI monitoring	http://data.europa.eu/esco/skill/8dcbcabbe-09f7-4d11-940d-125af57bbc40	3

GENERAL INFORMATION

Course provider	Fondazione Ergo
Country	Italy
Language	Italian / English
Education Subject	Process Optimization via Advanced Data Analytics & AI
Learner Profile	Data analysts, process-improvement specialists, operations managers, digital transformation leads
Mode of Learning	Hybrid/ In-person
Credential Type	Certificate
EQF Level	6
Teaching Methodology	Theoretical / Practical / Practical in CLF
Learning Environment	Classroom, IT lab

INFORMATION ABOUT THE COURSE

Workload / Duration	4 days (32 h) – approx.
Price	Depending on time schedule and location
Location	Learning Factory, Smartt Valley
Learning activities	Process mapping exercises, Process Mining case studies, ML model builds, dashboard creation workshops
Assessment Type	Multiple choice assessment customized on client needs + situational interview
Entry requirement	Basic statistics

The course's content, schedule and location can be adapted to the needs of the recipients.

This course enables professionals to design and deploy Digital Twin systems by integrating IoT sensors, dynamic process models, and advanced analytics for real-time monitoring, simulation, and optimization of physical assets. It also demonstrates how AR/VR technologies enhance operator training, hazard detection, and field operations to boost quality, safety, and time-to-market.

<https://www.smarttvalley.it/manufacturing/>

ADMA TRANSFORMATION AREA

Digital Factory; Advanced Manufacturing Technologies; Smart Manufacturing

Digital Twin · IoT integration · Real-time simulation · Advanced analytics · AR/VR training · Hazard detection · Operator support systems · Process optimization

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Digital modelling technologies	http://data.europa.eu/esco/skill/737f8895-46df-4283-8f38-13f3f0fc3b77	3
Integrate IoT sensor data for process monitoring	http://data.europa.eu/esco/skill/46ec0033-3c71-415e-bcff-b065675ba2dc	3
Apply advanced process simulation and analytics	http://data.europa.eu/esco/skill/b9e451f5-a62f-4a16-a229-255fa5c222a5	4
Design and implement AR/VR training environments	http://data.europa.eu/esco/skill/0620ecd1-e4b1-4dfa-972b-38a93e5ebd9d	3

GENERAL INFORMATION

Course provider	Fondazione Ergo
Country	Italy
Language	Italian / English
Education Subject	Process Simulation Systems, Digital Twin, AR/VR
Learner Profile	Industry automation engineers, maintenance managers, digital transformation specialists
Mode of Learning	Hybrid/In-persons
Credential Type	Certificate
EQF Level	6
Teaching Methodology	Theoretical / Practical / Practical in CLF
Learning Environment	Classroom, IT lab with VR solutions, Experience lab with XR-equipped workstations, Campus Smartt Valley KIIS

INFORMATION ABOUT THE COURSE

Workload / Duration	3 days (18 h) – approx.
Price	Depending on time schedule and location
Location	Smartt Valley
Learning activities	Lectures, simulation labs, AR/VR scenario exercises
Assessment Type	Multiple choice assessment customized on client needs + situational interview
Entry requirement	Basic knowledge of IoT, production processes; familiarity with digital analytics

The course's content, schedule and location can be adapted to the needs of the recipients.

Product Digital Twin

ADMA TRANSFORMATION AREA

The course offers an intensive, dynamic learning experience on the strength of the Competence Centre demonstration areas, integrating theory and practice and team project work at the end of the course. The approach is multidisciplinary, collaborative, experiential and concrete.

<https://www.made-cc.eu/en/servizio/training-skills/>

Digital Factory, Smart Manufacturing

Digitalisation, design, automation

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
3D Modelling	http://data.europa.eu/esco/skill/97965983-0da4-4902-9daf-d5cd2693ef73	2
Run simulations	http://data.europa.eu/esco/skill/a432ffcd-b58d-4417-836c-ea3282b626ca	3

GENERAL INFORMATION

Course provider	MADE Competence Center Industry 4.0
Country	Italy
Language	Italian
Education Subject	Digital Twin, Product Lifecycle, Industry 4.0
Learner Profile	Engineers, Technical Designers, Workers in product development roles
Mode of Learning	Online / Hybrid / In Person
Credential Type	Microcredential
EQF Level	EQF3
Teaching Methodology	Practical
Learning Environment	Classroom

INFORMATION ABOUT THE COURSE

Workload / Duration	6 hours
Price	450 EUR
Location	Milan, Italy / online
Learning activities	Workshops, simulation labs, technology tours
Assessment Type	Group exercises and applied project evaluation
Entry requirement	Familiarity with CAD/PLM and industrial design processes
Admission procedure	By filling up online module - Formare competenze - Made

APMC 504V – Project Closing & Continuous Improvement

ADMA TRANSFORMATION AREA

Learn the close out procedures for an individual phase or completed project. You will work through an administrative closure, financial closure and transfer to operations, using the lessons learned review process for continuous improvement. Also, you will explore the Organizational Project Management Maturity Model (OPM3)[®] and how to set up a Project Management Office.

[APMC 504V Project Closing & Continuous Improvement](#)

END-TO-END CUSTOMER-
FOCUSED ENGINEERING

APPLIED PROJECT MANAGEMENT

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
S4.2 Organising, Planning, and Scheduling Work and Activities	management skills	4
S4.4 Performing administrative activities	management skills	4
S4.9 Decision-Making	management skills	4

GENERAL INFORMATION

Course provider	Camosun College / ProSIT
Country	Canada
Language	English
Education Subject	Business
Learner Profile	College Students
Mode of Learning	Online
Credential Type	College Certificate
EQF Level	4
Teaching Methodology	Theoretical
Learning Environment	Online

INFORMATION ABOUT THE COURSE

Start Date – End Date	Self-Paced
Workload / Duration	Self-Paced
Price	\$487.47 CAD
Location	Camosun College
Learning activities	Lectures and analysis
Assessment Type	Exams
Entry requirement	Must be enrolled in Applied Project Management Certificate program
Admission procedure	Enroll as part of program above

APMC 500V – Project Initiation and Charter Development

ADMA TRANSFORMATION AREA

Learn the fundamentals of project management for organizations including project selection and start up methods. Gain practical experience defining specific project needs and developing a project charter that provides the correct level of detail for your situation.

[APMC 500V Project Initiation & Charter Development](#)

END-TO-END CUSTOMER-
FOCUSED ENGINEERING

APPLIED PROJECT MANAGEMENT

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
S4.2 Organising, Planning, and Scheduling Work and Activities	management skills	4
S4.4 Performing administrative activities	management skills	4
S4.9 Decision-Making	management skills	4

GENERAL INFORMATION

Course provider	Camosun College / ProSIT
Country	Canada
Language	English
Education Subject	Business
Learner Profile	College Students
Mode of Learning	Online
Credential Type	College Certificate
EQF Level	3
Teaching Methodology	Theoretical
Learning Environment	Online

INFORMATION ABOUT THE COURSE

Start Date – End Date	Self-Paced
Workload / Duration	Self-Paced
Price	\$487.47 CAD
Location	Camosun College
Learning activities	Lectures and analysis
Assessment Type	Exams
Entry requirement	Must be enrolled in Applied Project Management Certificate program
Admission procedure	Enroll as part of program above

PLM management: 3D experience

This course introduces the fundamentals of Product Lifecycle Management (PLM) using Dassault Systèmes 3DEXPERIENCE platform. Based on the practical case of the LCAMP robot development, participants will learn basic PLM management and how to manage design data in a collaborative and efficient way.

<https://www.maltuna.eus/en/>

ADMA TRANSFORMATION AREA

Advanced Manufacturing Technologies, Digital Factory

PLC, automation, robotics

CURRENT
MATURITY (1-5):
3



TARGET
MATURITY
LEVEL (1-5): 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Apply product lifecycle management (PLM)	https://esco.ec.europa.eu/en/skill/c8399675-1d86-4d67-8004-97b37ef36f39	3
Manage data for product development	https://esco.ec.europa.eu/en/skill/3a34535a-f2ef-441e-8a00-fd7e95d4e60d	4
Collaborate in engineering processes	https://esco.ec.europa.eu/en/skill/44db4045-b91a-459e-9384-9f5280fbc230	4
Use computer-aided software (CAD, CAM, CAE)	https://esco.ec.europa.eu/en/skill/61a19164-7277-4d3b-931d-2779a7de18f6	4

GENERAL INFORMATION

Course provider	Miguel Altuna LHII
Country	Basque Country, Spain
Language	English
Education Subject	Higher Technician in Mechanical Manufacture Design
Learner Profile	students EQF5, workers
Mode of Learning	In Person
EQF Level	EQF5
Teaching Methodology	Practical in CLF
Learning Environment	CLF

INFORMATION ABOUT THE COURSE

Workload / Duration	10 hours
Price	0€
Location	Bergara, Miguel Altuna LHII
Assessment Type	Project
Entry requirement	EQF5 level

Redesign of parts and assembly using CAD software

ADMA TRANSFORMATION AREA

Advanced Manufacturing
Technologies

CAD software, Redesign

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

Using a computer equipped with CAD software, learners must modify existing parts and assemblies to facilitate the manufacturing of certain components, improve the assembly of specific sets, and enhance performance. Participants will develop skills in redesigning components, adjusting assemblies for better fit and function, and applying engineering principles to optimize designs.

<https://decouverte.mon-ent-occitanie.fr/presentation-du-lycee/nos-filieres/>

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
CAD software	http://data.europa.eu/esco/skill/a2b5dcf3-5b6a-453d-876c-cff540c0faf1	3
Industrial design	http://data.europa.eu/esco/skill/efacdaad-ab73-4056-bee3-4eb34b458bf6	3
Engineering principles	http://data.europa.eu/esco/skill/209a5498-3449-4689-8ed9-bd08cab4fd78	3

GENERAL INFORMATION

Course provider	Lycée La Découverte
Country	France
Language	French
Education Subject	Design engineering
Learner Profile	Learners EQF4
Mode of Learning	In Person
Credential Type	Baccalaureate
EQF Level	4
Teaching Methodology	Theoretical & Practical
Learning Environment	VET Centre

INFORMATION ABOUT THE COURSE

Start Date – End Date	September 2025
Workload / Duration	6 Hours
Location	Lycée La Découverte Decazeville France
Learning activities	Theoretical classes and practical work

Reverse Engineering with 3D CAD: NX

ADMA TRANSFORMATION AREA

Practical exercises using the CAD program demonstrate the work process of reverse engineering and its applications. Suitable for CAD software users who want to learn about the reverse engineering process with NX.

<https://www.imh.eus/en>

Advanced Manufacturing
Technologies, Digital Factory

3D modeling, reverse engineering,
solid edge

CURRENT
MATURITY (1-5)
LEVEL: 3



TARGET
MATURITY
LEVEL (1-5): 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Perform reverse engineering	https://esco.ec.europa.eu/en/skill/0d7f5b15-9b59-4cd6-b8fd-bb5f390234d5	3
Use computer-aided design software (CAD)	https://esco.ec.europa.eu/en/skill/ba1e95b2-7e99-4ec5-8d51-8cb13e4f74e2	4
Create 3D models	https://esco.ec.europa.eu/en/skill/33265b4d-92c7-4532-b1de-fd42c3e049b4	4
Interpret technical drawings	https://esco.ec.europa.eu/en/skill/f387a644-d24b-4d83-b948-80e4f43c5130	3

GENERAL INFORMATION

Course provider	IMH CAMPUS
Country	Basque Country/ Spain
Language	English, Spanish
Mode of Learning	In-Person
Credential Type	Microcredential Course
EQF Level	3
Teaching Methodology	Theoretical / Practical

INFORMATION ABOUT THE COURSE

Workload / Duration	15 hours
Location	Elgoibar, Basque Country

SERVICE / TOOL DESCRIPTION

1. General concepts.
2. Tools for repairing the scanned file.
3. Methods for reverse engineering.
4. Directly fast modeling of surfaces.
5. Color classification method
6. Extract curves and create surfaces
7. Boundary curve projection method.

Reverse Engineering with 3D CAD: Solid Edge

Practical exercises using the CAD program demonstrate the work process of reverse engineering and its applications. Suitable for CAD software users who want to learn about the reverse engineering process with Solid Edge.

<https://www.imh.eus/en>

ADMA TRANSFORMATION AREA

Advanced Manufacturing
Technologies, Digital Factory

3D modeling, reverse engineering,
solid edge

CURRENT
MATURITY (1-5)
LEVEL: 3



TARGET
MATURITY
LEVEL (1-5): 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Perform reverse engineering	https://esco.ec.europa.eu/en/skill/0d7f5b15-9b59-4cd6-b8fd-bb5f390234d5	3
Use computer-aided design software (CAD)	https://esco.ec.europa.eu/en/skill/ba1e95b2-7e99-4ec5-8d51-8cb13e4f74e2	4
Create 3D models	https://esco.ec.europa.eu/en/skill/33265b4d-92c7-4532-b1de-fd42c3e049b4	4
Interpret technical drawings	https://esco.ec.europa.eu/en/skill/f387a644-d24b-4d83-b948-80e4f43c5130	3

GENERAL INFORMATION

Course provider	IMH CAMPUS
Country	Basque Country/ Spain
Language	English, Spanish
Mode of Learning	In-Person
Credential Type	Microcredential Course
EQF Level	3
Teaching Methodology	Theoretical / Practical

INFORMATION ABOUT THE COURSE

Workload / Duration	15 hours
Location	Elgoibar, Basque Country

SERVICE / TOOL DESCRIPTION

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2. Tools for repairing the scanned file.
3. Methods for reverse engineering.
4. Directly fast modeling of surfaces.
5. Color classification method
6. Extract curves and create surfaces
7. Boundary curve projection method.

Risk and change management

ADMA TRANSFORMATION AREA

Risk and change management

Part of the lecture T4WIW9146

Learning Outcome: Learning psychology / Decision-making / Organisational culture / Personality description / Motivation / Group dynamics / Stress and coping

<https://www.heidenheim.dhbw.de/en/home>

Value Chain Oriented Open
Factory

Psychology, organisation,
decision, management

CURRENT
MATURITY (1-5)
LEVEL 4



TARGET
MATURITY
LEVEL (1-5)
LEVEL 5

GENERAL INFORMATION

Course provider	DHBW Heidenheim
Country	Germany
Language	German
Education Subject	Understanding behaviour: psychological foundations for organisation and decision-making
Learner Profile	A-Level
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF6
Teaching Methodology	Theoretical / Practical
Learning Environment	HVET Centre

INFORMATION ABOUT THE COURSE

Start Date – End Date	01.10.25 – 31.12.25
Workload / Duration	1 ECTS /30h
Location	DHBW Heidenheim (Baden-Wuerttemberg Cooperative State University)

ESCO Skills

Apply change management

<http://data.europa.eu/esco/skill/3c03ee71-4a23-448f-b79e-81fd75d27dca>

Risk management

<http://data.europa.eu/esco/skill/6eff134b-e34f-4d6e-a6e8-5e47cf2228d0>

Roadmap to Sustainability

ADMA TRANSFORMATION AREA

The course aims at supporting management and key personnel in acquiring the necessary skills for integrating sustainability practices into the company. Participants will be able to (i) Identify existing activities aligned with ESG principles, (ii) Effectively engage internal and external stakeholders, (iii) Analyze challenges and opportunities through the IRO approach (Impacts, Risks, Opportunities), (iv) define ESG strategy.

<https://www.rolld.com/academy-offering/>

Eco Factory

Environmental impact:
improvement strategies

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Promote sustainable management	http://data.europa.eu/esco/skill/6742977a-aa00-4c8c-9861-898b0373907e	4

GENERAL INFORMATION

Course provider	Rold Academy
Country	Italy
Language	Italian (but it can also be delivered in English)
Education Subject	Strategies for integrating sustainability practices in an SME
Learner Profile	Roles involved in business organization (HR, Managers, Area Managers)
Mode of Learning	In Person
Credential Type	Certificate
EQF Level	6
Teaching Methodology	Theoretical and Practical
Learning Environment	MIND (Milan Innovation District), but it can also be arranged at company premises

INFORMATION ABOUT THE COURSE

Start Date – End Date	According to requests
Workload / Duration	16 hours (4h per day)
Schedule information	Possibility to arrange specific courses
Price	1600 €
Location	Milan (Italy)
Learning activities	Mapping of existing activities and analysis of the company context Analysis of case studies and industry benchmarks (with a focus on SMEs and the supply chain) Interactive Workshop: Identification of Impacts, Risks, and Opportunities (IRO) Stakeholder Engagement: Defining key actors and engagement methods (internal and external – customers, suppliers, communities, etc.) Definition of Priority Actions based on relevance, feasibility, and impact Drafting of a Strategic Sustainability Plan (with focus on objectives, indicators, roles, and communication methods)
Assessment Type	Questionnaire
Entry requirement	No entry requirement
Admission procedure	Interview

Course schedules and content can be customized, and additional follow-up meetings and continuous learning activities activities can be planned.

Robot programming health and security

ADMA TRANSFORMATION AREA

The focus of this course is operator safety. Technology's impact on occupational health and safety is explored together with ways technology can best be used to mitigate occupational injury and/or illness, where possible, synergically with productivity.

<https://www.made-cc.eu/it/corso/salute-e-sicurezza-nella-fabbrica-4-0-vr-ar-robotica-collaborativa-esoscheletri/>

Digital Factory, Smart Manufacturing

Operator assistance systems, Collaborative robotics, Virtual design

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Occupational health	http://data.europa.eu/esco/skill/d5e39a53-4f54-4d5f-9df3-b49664c9559d	2
Robotics	http://data.europa.eu/esco/skill/e87ec79a-c9ff-46f5-84fa-7a0f394cdf40	2
Emergent technologies	http://data.europa.eu/esco/skill/42cb7669-c371-4903-9c0b-13db67b2e4bb	2

GENERAL INFORMATION

Course provider	MADE Competence Center Industry 4.0
Country	Italy
Language	Italian
Education Subject	Industry 4.0
Learner Profile	Operational-technical: entrepreneurs, Departmental Workers, Maintenance workers, HR, Programmers, ICT experts
Mode of Learning	Online / Hybrid / In Person
Credential Type	Microcredential
EQF Level	EQF3
Teaching Methodology	Practical
Learning Environment	Classroom

INFORMATION ABOUT THE COURSE

Start Date – End Date	22 October 2025
Workload / Duration	8 hours
Price	1000 EUR
Location	Milan, Italy
Learning activities	Participant-lecturer interaction during the lessons with a marked operational focus in teaching methods on real business context experience
Assessment Type	No formal exam or graded assessment. Participation-based evaluation
Entry requirement	No prior coding or deep technical expertise required, but a basic understanding of business or operations is probably expected
Admission procedure	By filling up online module - Formare competenze - Made

Robotics Kinematics and Control

ADMA TRANSFORMATION AREA

MC 2335 Robotics and Kinematics Control

Part of the lecture T3M30306

Learning Outcome: Kinematics and interpolation. Robot and process control. The use of robot systems (with case studies involving technical and economic analyses).

<https://www.heidenheim.dhbw.de/en/home>

Advanced Manufacturing, Smart Manufacturing

Kinematics, interpolation, robot, systems

CURRENT
MATURITY (1-5)
LEVEL 4



TARGET
MATURITY
LEVEL (1-5)
LEVEL 5

GENERAL INFORMATION

Course provider	DHBW Heidenheim
Country	Germany
Language	German
Education Subject	Robotics and Kinematics Control
Learner Profile	A-Level
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF6
Teaching Methodology	Lecture
Learning Environment	HVET Centre

INFORMATION ABOUT THE COURSE

Start Date – End Date	01.01.26 – 01.04.26
Workload / Duration	2 ECTS / 50h
Location	DHBW Heidenheim (Baden-Wuerttemberg Cooperative State University)

ESCO Skills

Human-robot collaboration

<http://data.europa.eu/esco/skill/0f5374e3-0b9b-4b16-af7a-49654ce0bb15>

Robotics Laboratory

ADMA TRANSFORMATION AREA

MC 2336 Robotics Laboratory

Part of the lecture T3M30306

Learning Outcome: Laboratory robotics. Case studies on programming various robotic systems in a laboratory environment.

<https://www.heidenheim.dhbw.de/en/home>

Advanced Manufacturing, Smart Manufacturing

Robotics, system, laboratory

CURRENT
MATURITY (1-5)
LEVEL 4



TARGET
MATURITY
LEVEL (1-5)
LEVEL 5

GENERAL INFORMATION

Course provider	DHBW Heidenheim
Country	Germany
Language	German
Education Subject	Robotics Laboratory
Learner Profile	A-Level
Mode of Learning	Laboratory
Credential Type	ECTS
EQF Level	EQF6
Teaching Methodology	Laboratory
Learning Environment	HVET Centre

INFORMATION ABOUT THE COURSE

Start Date – End Date	01.01.26 – 01.04.26
Workload / Duration	2 ECTS / 50h
Location	DHBW Heidenheim (Baden-Wuerttemberg Cooperative State University)

ESCO Skills

Set up automotive robot

<http://data.europa.eu/esco/skill/e975b791-b488-4935-be44-06f2f9a443bb>

Robotics

<http://data.europa.eu/esco/skill/e87ec79a-c9ff-46f5-84fa-7a0f394cdf40>

SIMATIC S7 SCL

ADMA TRANSFORMATION AREA

This course covers the advanced Structured Control Language (SCL) programming, which is increasingly replacing traditional Statement List (STL) programming due to more complex algorithms and evolving CPU architectures. Upon completion, participants will be capable of independently developing sophisticated algorithms and performing system diagnostics.

<https://www.dankon.si/izobra%C5%BEEvanje/simatic-s7-scl/#opis>

Smart manufacturing

SCL, PLC Programming, Data Processing, SIMATIC

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Industrial software	http://data.europa.eu/esco/skill/41ec47dd-08b3-464a-9c45-c706f3e74467	4
Operate programmable logic controllers (PLCs)	http://data.europa.eu/esco/skill/6468e5fb-f3be-4025-87be-4b6556755c61	4

GENERAL INFORMATION

Course provider	Dankon industrijska avtomatizacija
Country	Slovenia
Language	Slovenian
Education Subject	SIMATIC S7 SCL
Learner Profile	Workers, Adult
Mode of Learning	In Person
Credential Type	Paper based
EQF Level	EQF 4 and 5
Teaching Methodology	Theoretical / Practical
Learning Environment	Learning lab

INFORMATION ABOUT THE COURSE

Start Date – End Date	06/10/2025 – 08/10/2025
Workload / Duration	24 hours (3 days)
Schedule information	06/10/2025 – 08/10/2025 (morning/afternoon)
Price	1.195,60 EUR (VAT included)
Location	Žalec
Learning activities	Practical example, diagnostic, creating programme code
Assessment Type	Practical exam
Entry requirement	Basic knowledge of electrical engineering

Selective Laser Sintering (SLS) 3D-Printing

ADMA TRANSFORMATION AREA

This training includes practical training using SLS-printing in ABS-plastic, for precise additive manufactured parts, using similar techniques as SLS-printing in Metal. This training also includes PPE.

<https://www.cng.se/te4-gymnasieingenj%C3%B6r>

Advanced Manufacturing Technologies

Additive manufacturing, 3D-printing, SLS, PPE

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
3D Printing process	http://data.europa.eu/esco/skill/2afb2b59-c9a3-4cf3-b1dd-1a2fad51e583	3
Maintain AM systems	http://data.europa.eu/esco/skill/3a699f1e-3803-4c1b-b6a8-6230cca92933	3
Set up AM systems	http://data.europa.eu/esco/skill/5f8e1bde-a2f9-4742-a4f4-309dfc2f6311	3

GENERAL INFORMATION

Course provider	Curt Nicolin Gymnasiet
Country	Sweden
Language	Swedish
Education Subject	Industrial production methods
Learner Profile	EQF 5
Mode of Learning	In Person
Credential Type	Certificate of Completion
EQF Level	EQF 5
Teaching Methodology	Practical
Learning Environment	Workshop

INFORMATION ABOUT THE COURSE

Start Date – End Date	According to agreement
Workload / Duration	4 days
Schedule information	4 days training
Location	Finspång Sweden
Learning activities	Practical training in SLS 3D-printer, PPE
Assessment Type	Practical test
Entry requirement	Technical studies or similar completed EQF 4
Admission procedure	https://www.cng.se/

SOLIDWORKS ADVANCED PART MODELING

SOLIDWORKS Advanced Part Modeling is designed for users who want to deepen their knowledge and master advanced modeling techniques. Participants will learn how to handle complex geometries, use advanced sketching and modeling methods, adapt imported geometry, and efficiently use the feature library.

<https://www.solidworld.si/izobrazevanja/napredno-modeliranje-kosov>

ADMA TRANSFORMATION AREA

Smart manufacturing

3D Modeling, SOLIDWORKS, Multibody Design

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
3D modeling	http://data.europa.eu/esco/skill/97965983-0da4-4902-9daf-d5cd2693ef73	4
Interpret 3D plans	http://data.europa.eu/esco/skill/aafbb139-02c6-4f35-bc62-ff73faf97d6d	4

GENERAL INFORMATION

Course provider	Solid World
Country	Slovenia
Language	Slovenian
Education Subject	This course delves into advanced 3D modeling techniques, focusing on multibody design, complex 3D sketching, and sophisticated feature creation like sweeps, lofts, and advanced fillets. You'll gain expertise in managing complex geometries, working with imported data, and building reusable design libraries within a CAD environment.
Learner Profile	Adult, students
Mode of Learning	Online / Hybrid / In Person
Credential Type	Certificat
EQF Level	EQF 5
Teaching Methodology	Theoretical / Practical / Practical in CLF
Learning Environment	Educational lab

INFORMATION ABOUT THE COURSE

Start Date – End Date	21/10/2025 – 29/10/2025
Workload / Duration	3 days (21 hours)
Schedule information	21/10/2025, 8:30 - 15:30 22/10/2025, 8:30 - 15:30 29/10/2025, 8:30 - 15:30
Price	570,00 EUR
Location	Rusjanova ulica 10, 1235 Radomlje
Learning activities	Practical exercises
Assessment Type	Certificat of achievement

Statistical Process Control (SPC)

ADMA TRANSFORMATION AREA

Statistical Process Control (SPC) is a method used in manufacturing and service industries to monitor and control processes through statistical techniques. This course provides participants with the knowledge and tools to apply SPC to improve process performance, reduce variability, and ensure product quality.

<https://community.lcamp.eu/catalog-item/statistical-process-control-spc/>

Digital Factory, Smart Manufacturing

Big data, data analysis, business intelligence

CURRENT MATURITY
LEVEL (1-5)

3

TARGET MATURITY
LEVEL (1-5)

4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Statistical process control	http://data.europa.eu/esco/skill/0c77bcd5-b94a-475d-98e9-5a4327e4d726	3
Apply control process statistical methods	http://data.europa.eu/esco/skill/ee8fee1a-75c1-43fb-b08d-779929f99249	3
Interpret current data	http://data.europa.eu/esco/skill/1e77e42a-181f-4b48-8e74-201ce50ffc29	3
Monitor manufacturing quality standards	http://data.europa.eu/esco/skill/3edfcb2b-2d0e-4673-87ce-f55c37eb5fca	2

GENERAL INFORMATION

Course provider	IMH CAMPUS
Country	Basque Country / Spain
Language	Spanish
Education Subject	Analyze a production process by means of control charts and capacity studies to predict its evolution over time and make decisions.
Learner Profile	Technical personnel responsible for production and quality areas who want to apply statistical control techniques.
Mode of Learning	Online
Credential Type	Microcredential Course
EQF Level	5
Teaching Methodology	Theoretical / Practical / Practical in CLF

INFORMATION ABOUT THE COURSE

Workload / Duration	16 Hours
Price	250€
Location	Online
Entry requirement	Basic knowledge of production and quality control, and spreadsheet management.

Subtractive manufacturing processes

ADMA TRANSFORMATION AREA

This course introduces learners to the principles and practical aspects of subtractive manufacturing. Participants will learn how to prepare digital files, set up machining operations, and produce components. They will learn principles such as : file management, machining strategies, process control, and quality verification to ensure efficient and accurate manufacturing outcomes.

<https://community.lcamp.eu/catalog-item/subtractive-manufacturing-processes/>

Advanced Manufacturing Technologies

Manufacturing processes, machining strategies

CURRENT
MATURITY
LEVEL 3



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Manufacturing processes	http://data.europa.eu/esco/skill/3786b61f-f22e-48d1-af8d-ad4c354534db	3
Abrasive machining processes	http://data.europa.eu/esco/skill/f777173e-567c-4d4a-80b3-0ff5353bb9ce	3
Quality standards	http://data.europa.eu/esco/skill/8d4271ca-c9fd-40b3-875f-15f78332a49e	3

GENERAL INFORMATION

Course provider	Lycée La Découverte
Country	France
Language	French
Education Subject	Manufacturing processes
Learner Profile	Learners in EQF 5 diploma
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	5
Teaching Methodology	Theoretical & Practical
Learning Environment	VET Center

INFORMATION ABOUT THE COURSE

Start Date – End Date	2025-02-10 2025-02-11
Workload / Duration	12 Hours
Location	Lycée La Découverte Decazeville France
Learning activities	Theoretical classes and practical work
Entry requirement	EQF 4 diploma
Admission procedure	Registration – Parcoursup

Teamwork

Teamwork has proven to be a soft skill that is becoming increasingly important in the development of organizations, bringing numerous benefits to both the organization and the employee.

<https://www.lhusurbil.eus/web/Default.aspx?lng=EU>

ADMA TRANSFORMATION AREA

Human Centred Organization

Human, teamwork, Industry 5.0

CURRENT
MATURITY (1-5)
LEVEL: 4



TARGET
MATURITY
LEVEL (1-5): 5

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Work in a team	https://esco.ec.europa.eu/en/skill/431bd4e6-0994-4ef8-b388-71c9f326b0d7	4
Foster teamwork	https://esco.ec.europa.eu/en/skill/f69b145c-f4f4-4c5b-8b90-d3b252e9c81d	5
Communicate in a team	https://esco.ec.europa.eu/en/skill/8eae4f48-dab3-4484-8963-805e6bd72d4e	4
Show intercultural awareness	https://esco.ec.europa.eu/en/skill/c4d57995-6b4b-4d11-b430-4c198ae12e68	5

GENERAL INFORMATION

Course provider	CIFP Usurbil LHII
Country	Basque Country/ Spain
Language	Spanish
Learner Profile	Professionals, team leaders, and employees from various organizational levels who seek to enhance their teamwork skills
Mode of Learning	Online
Credential Type	Microcredential Course
EQF Level	Although it is not currently part of the National Qualifications Framework (NQF), the course is part of the lifelong learning offer of the Basque Government.
Teaching Methodology	Theoretical / Practical / Practical in CLF

INFORMATION ABOUT THE COURSE

Workload / Duration	30 hours
Price	Free
Location	Usurbil, Basque Country

THINKING INNOVATIVELY

ADMA TRANSFORMATION AREA

Thinking innovately is important in terms of to develop ideas or conclusions that lead to the creation and Implementation of innovations or changes. Objectives of this course are: understanding the concept and importance of innovative thinking in today's world, developing skills to approach problems creatively and propose new ideas, learning techniques to foster innovation in different areas of life and work, practicing on applying innovative thinking to real-world situations and projects, working in teams to create and present innovative solutions.

<https://community.lcamp.eu/catalog-item/gebkim-vet-thinking-innovatively/>

HUMAN-CENTERED
ORGANIZATION

HUMAN-FOCUSED INNOVATION

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Thinking creatively and innovatively	Thinking creatively and innovatively	4
Think innovatively	Think innovatively	4

GENERAL INFORMATION

Course provider	KPDoNE
Country	Türkiye
Language	Turkish
Education Subject	The course introduces the principles and tools of innovative thinking, fostering creativity, problem-solving, and idea development. It encourages learners to generate novel solutions in work, entrepreneurship, and social contexts.
Learner Profile	VET Students and Teachers
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF 4
Teaching Methodology	Theoretical / Practical
Learning Environment	VET Centre

INFORMATION ABOUT THE COURSE

Workload / Duration	42 Hours
Location	KPDoNE
Learning activities	Lectures, Practicing brainstorming and mind-mapping
Assessment Type	Participation in workshops and creative sessions, Team-based innovation challenge or mini-project
Entry requirement	Interest in creativity, entrepreneurship, or personal development
Admission procedure	Online or in-person application submission

Towards Open and Generative Organizational Models

ADMA TRANSFORMATION AREA

The course aims to develop the ability to (i) critically analyse organizational and leadership models, (ii) Encourage reflection on the changes impacting the effectiveness of current organizational structures, (iii) introduce and experiment with new learning approaches to support change.

<https://www.rolld.com/academy-offering/>

Human Centred Organization

People management and development

CURRENT
MATURITY
LEVEL 1



TARGET
MATURITY
LEVEL 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Leading and motivating	http://data.europa.eu/esco/skill/S4.5	3

GENERAL INFORMATION

Course provider	Rold Academy
Country	Italy
Language	Italian
Education Subject	Towards Open and Generative Organizational Models
Learner Profile	Roles involved in business organization (HR, Managers, Area Managers, Board Members, Team Leaders)
Mode of Learning	In Person
Credential Type	Certificate
EQF Level	6
Teaching Methodology	Theoretical and Practical
Learning Environment	MIND (Milan Innovation District), but it can also be arranged at company premises

INFORMATION ABOUT THE COURSE

Start Date – End Date	According to requests
Workload / Duration	8 hours (4h per day)
Schedule information	Possibility to arrange specific courses
Price	800 €
Location	Milan (Italy)
Learning activities	The learning activities include: (i) What is an organization? (ii) Closed vs. open organizations: features and key differences (iii) Introduction to global change agents and their impact (iv) The strategic value of plurality and inclusion in organizations (v) Group work: exploring and practicing models of distributed leadership (vi) How skills and knowledge are acquired and transmitted in open contexts
Assessment Type	Questionnaire
Entry requirement	No entry requirement
Admission procedure	Interview

Course schedules and content can be customized, and additional follow-up meetings and continuous learning activities activities can be planned.

Understanding Environmental and Social Impacts

ADMA TRANSFORMATION AREA

The course aims to (i) identify the key factors that make sustainability processes a lever for competitiveness, (ii) gain knowledge related to environmental and social impact assessments, (iii) understand the role of supply chain relationships and stakeholders in enabling shared and systemic sustainability processes.

<https://www.rolld.com/academy-offering/>

Eco Factory

Eco design

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Assess environmental impact	http://data.europa.eu/esco/skill/e541c69c-ea80-4b17-87cb-4001d0b9d303	3

GENERAL INFORMATION

Course provider	Rold Academy
Country	Italy
Language	Italian (but it can also be delivered in English)
Education Subject	Strategies for leveraging LCA to redesign processes and products
Learner Profile	Roles involved in business organization (HR, Managers, Area Managers)
Mode of Learning	In Person
Credential Type	Certificate
EQF Level	6
Teaching Methodology	Theoretical and Practical
Learning Environment	MIND (Milan Innovation District), but it can also be arranged at company premises

INFORMATION ABOUT THE COURSE

Start Date – End Date	According to requests
Workload / Duration	8 hours
Schedule information	Possibility to arrange specific courses
Price	1400 €
Location	Milan (Italy)
Learning activities	CURRENT CONTEXT & FUTURE SCENARIOS: DRIVERS AND REGULATIONS Why it is still strategic for SMEs to invest in sustainability UNDERSTANDING AND MANAGING IMPACTS ON ENVIRONMENT AND PEOPLE LCA (Life Cycle Assessment) as a tool for creativity and redesign (includes theory and practical exercise) Social impacts in the supply chain (includes theory and practical exercise)
Assessment Type	Questionnaire
Entry requirement	No entry requirement
Admission procedure	Interview

Course schedules and content can be customized, and additional follow-up meetings and continuous learning activities can be planned.

USING A CHEMICAL REACTOR

ADMA TRANSFORMATION AREA

Preparing the reactor for production and commissioning.

<https://community.lcamp.eu/catalog-item/using-a-chemical-reactor/>

ADVANCED MANUFACTURING
TECHNOLOGIES

CHEMICAL PROCESS CONTROL

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Use chemical analysis equipment	Use chemical analysis equipment	4
Chemical processes	Chemical processes	4

GENERAL INFORMATION

Course provider	GEBKIM VET
Country	Türkiye
Language	Turkish
Education Subject	This course provides learners with the theoretical and practical skills required to operate, monitor, and control chemical reactors safely and efficiently in industrial environments. It includes understanding reaction types, process parameters, and safety protocols.
Learner Profile	Students, Technician
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF 4
Teaching Methodology	Theoretical / Practical
Learning Environment	VET Centre

INFORMATION ABOUT THE COURSE

Workload / Duration	30 Hours
Location	GEBKIM VET
Learning activities	Lectures, Practices, Lab Work
Assessment Type	Lab performance, Hands-on practical evaluations
Entry requirement	Interest in industrial chemical processes and plant operations
Admission procedure	Online or in-person application submission

WASTE TREATMENT PROCESS

ADMA TRANSFORMATION AREA

It aimed at educating students or professionals about waste treatment methods, environmental impacts, and modern waste management practices.

<https://community.lcamp.eu/catalog-item/gebkim-vet-waste-treatment-process/>

ECO FACTORY

WASTE MANAGEMENT

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Waste management	Waste management	4
Manage waste	Manage waste	4
Dispose waste	Dispose waste	4

GENERAL INFORMATION

Course provider	Gebkim VET
Country	Türkiye
Language	Turkish
Education Subject	"Waste Treatment Process" course aims to equip learners with practical and theoretical knowledge about waste collection, segregation, treatment technologies, and environmental sustainability in accordance with European and national standards.
Learner Profile	EQF 4
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF 4
Teaching Methodology	Theoretical / Practical
Learning Environment	VET Centre

INFORMATION ABOUT THE COURSE

Workload / Duration	30 Hours
Location	GEBKIM VET
Learning activities	Lectures & Practices
Assessment Type	Quizz, Lab Works, Exams
Entry requirement	Motivation and interest in environmental sustainability
Admission procedure	Online or in-person application submission

Workplace Organization & Standard Work

This course introduces the key methods and tools for standardizing work operations in both production and service contexts. Participants learn how to develop Standard Operating Procedures (SOPs), implement 5S, conduct improvement audits and sustain continuous workplace organization.

<https://www.smarttvalley.it/manufacturing/>

ADMA TRANSFORMATION AREA

Human-Centred Organisation; Smart Manufacturing; End-to-End Customer-Focused Engineering

Standard Work · SOP · Visual SOP · One-Point Lessons (OPL) · Work Instructions · 5S · Improvement Audits · Checklists · Workplace Organization · Continuous Improvement

CURRENT
MATURITY
LEVEL 1



TARGET
MATURITY
LEVEL 3

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Develop Standard Operating Procedures	http://data.europa.eu/esco/skill/c64c4f42-253b-4d53-8637-fd00d86100c7	3
Apply workplace organization techniques	http://data.europa.eu/esco/skill/d3eccb86-f02d-4950-bfbd-20b9510774a1	2
Conduct improvement and compliance audits	http://data.europa.eu/esco/skill/d3eccb86-f02d-4950-bfbd-20b9510774a1	2

GENERAL INFORMATION

Course provider	Fondazione Ergo
Country	Italy
Language	Italian / English
Education Subject	Key methods and tools for standardizing work operations in both production and service contexts
Learner Profile	Production supervisors, line operators, quality engineers, continuous-improvement specialists
Mode of Learning	In-Person/Hybrid
Credential Type	Certificate
EQF Level	5-6
Teaching Methodology	Theoretical / Practical / Practical in CLF
Learning Environment	Classroom, Experience lab with workstations

INFORMATION ABOUT THE COURSE

Workload / Duration	3 days (24 h) – approx
Price	Depending on time schedule and location
Location	Learning Factory, Smartt Valley
Learning activities	5S zone set-up, SOP writing workshops, audit simulations, group projects
Assessment Type	Multiple choice assessment customized on client needs + situational interview
Entry requirement	No prerequisites; familiarity with basic manufacturing concepts beneficial

The course's content, schedule and location can be adapted to the needs of the recipients.

WRITING A PROGRAM TO PLC

ADMA TRANSFORMATION AREA

Writes basic program to PLC by making relay and contact operations.

[GEBKIM VET-Writing a Program to PLC - Open Innovation Community](#)

SMART MANUFACTURING

SMART MANUFACTURING

CURRENT
MATURITY
LEVEL 2



TARGET
MATURITY
LEVEL 4

LEARNING OUTCOMES

ESCO Skill	ESCO URL	Maturity Level 1-4
Programmable logic controller	Programmable logic controller	4
Use logic programming	Use logic programming	4

GENERAL INFORMATION

Course provider	Gebkim VET
Country	Türkiye
Language	Turkish
Education Subject	This course focuses on the fundamentals of PLC (Programmable Logic Controller) programming, enabling learners to design, write, test, and troubleshoot basic automation programs used in industrial systems.
Learner Profile	EQF 4
Mode of Learning	In Person
Credential Type	ECTS
EQF Level	EQF 4
Teaching Methodology	Theoretical / Practical
Learning Environment	VET Centre

INFORMATION ABOUT THE COURSE

Workload / Duration	60 Hours
Location	GEBKIM VET
Learning activities	Lectures & Practices
Assessment Type	Practical programming tasks, Exams
Entry requirement	Basic knowledge of electricity, electronics, or IT
Admission procedure	Basic technical knowledge interview or short assessment

4. BENCHMARK DI ALTRE OFFERTE FORMATIVE

Questo capitolo presenta un'analisi di benchmarking delle offerte formative esterne con l'obiettivo di migliorare continuamente il catalogo formativo LCAMP rivolto alle PMI. La necessità di questo benchmarking si basa sui risultati emersi dal Deliverable 7.2. Dalle 59 analisi (i.e. [ADMA Scans](#)) di PMI condotte in otto Paesi sono emersi in modo ricorrente due punti di forza: l'End-to-End Customer Focused Engineering (orientamento al cliente) e la Human-centred Organization (orientamento ai dipendenti). Al contrario, quattro aree hanno mostrato livelli di maturità più deboli: Smart Manufacturing (bassi livelli di automazione e uso limitato dei dati in tempo reale), Digital Factory (criticità nell'integrazione dei sistemi e nella connettività), Value Chain Oriented Open Factory (limitata open innovation e scarse partnership esterne) ed ECO Factory (pratiche di sostenibilità non uniformi). Di conseguenza, il benchmarking dà priorità a percorsi formativi in grado di accelerare i progressi in queste aree più deboli, preservando e valorizzando al contempo i punti di forza già esistenti.

Sono stati analizzati sei fornitori rappresentativi, con profili complementari e portata globale: Coursera, EIT Manufacturing, Fraunhofer-Gesellschaft, Mondragon Unibertsitatea, POK (POLIMI Open Knowledge) e Udemy. Complessivamente, essi coprono:

- contenuti accademicamente rigorosi e validati dall'industria (università e organizzazioni di ricerca);
- offerte online modulari su larga scala (piattaforme MOOC);
- ecosistemi formativi applicativi e orientati alla pratica (KIC dell'innovazione e istituti di ricerca applicata);
- offerte multilivello che spaziano da corsi brevi e specializzazioni a micro-credenziali e programmi di laurea completi.

Questa combinazione consente di confrontare curricula, approcci pedagogici, modelli di certificazione e livelli di integrazione con l'industria, considerando differenti logiche di erogazione (piattaforme aperte, programmi universitari, accademie guidate da istituti), e di individuare buone pratiche trasferibili ai partner LCAMP.

Per garantire un confronto coerente e significativo tra le diverse organizzazioni analizzate, il benchmarking segue un approccio analitico comune.

Alla luce delle criticità emerse nel Deliverable 7.2, questo capitolo mette in evidenza percorsi formativi che:

- abilitano lo Smart Manufacturing (ad es. automazione, manutenzione predittiva, ottimizzazione basata su IA, monitoraggio in tempo reale);
- rafforzano la Digital Factory (integrazione dei sistemi ERP-MES-SCADA, governance dei dati, cybersecurity, digital twin);
- sviluppano la Value Chain Oriented Open Factory (open innovation, co-sviluppo con fornitori e clienti, condivisione dei dati, operazioni in rete);
- operazionalizzano le pratiche di ECO Factory (efficienza energetica e delle risorse, circolarità, eco-design, gestione sostenibile di acqua e materiali).

Questo benchmarking contribuisce direttamente al catalogo formativo LCAMP e al framework di micro-credenziali, supportando i partner nell'identificazione di formazioni esistenti rilevanti, nella definizione di nuove aree di sviluppo dei moduli e nel miglioramento di pedagogia, valutazione e cooperazione con l'industria, al fine di rafforzare l'impatto sulle PMI e la crescita della loro maturità.



4.1. COURSERA

Coursera è una delle principali piattaforme globali di apprendimento online, fondata nel 2012 dai professori di Stanford Daphne Koller e Andrew Ng. Collabora con università di livello mondiale e leader industriali per offrire corsi flessibili e di alta qualità, certificazioni professionali e programmi di laurea completi. Coprendo ambiti che spaziano dalla tecnologia e data science alla leadership, al business e alle scienze sociali, Coursera combina rigore accademico e competenze pratiche orientate al lavoro. I suoi punti di forza includono l'accessibilità globale, partnership prestigiose, opzioni di apprendimento modulari e un forte focus sulla crescita professionale e sull'apprendimento permanente.

Caratteristiche principali

- **Formati di apprendimento:** corsi singoli, specializzazioni (serie di corsi correlati), progetti guidati, certificazioni professionali e, in alcuni casi, programmi di laurea completi.
- **Flessibilità:** la maggior parte dei corsi è asincrona e auto-gestita, mentre alcuni seguono un calendario prestabilito.
- **Credenziali:** i partecipanti ottengono certificati, il cui valore riflette la reputazione dell'università o dell'organizzazione erogatrice.
- **Opzioni freemium e a pagamento:** molti corsi possono essere seguiti gratuitamente in modalità audit (senza certificazione), mentre le versioni a pagamento includono valutazioni e certificati. Sono disponibili anche formule in abbonamento come *Coursera Plus*.
- **Qualità e credibilità:** la piattaforma ospita corsi di istituzioni di primo piano come IIM, University of Illinois e IBM, garantendo credibilità accademica e professionale.
- **Ampia copertura tematica:** dalla data science e Intelligenza Artificiale alla leadership, al business e al digital marketing.
- **Supporto e servizi aggiuntivi:** peer review, casi studio, progetti "capstone" e attività pratiche sono frequenti. Molti corsi includono inoltre traduzioni e sottotitoli in più lingue.

Il design dei corsi di Coursera riflette un approccio strutturato e coerente che l'ha resa un benchmark nell'educazione digitale. La maggior parte delle specializzazioni segue un percorso progressivo, partendo dai concetti fondamentali, passando per le applicazioni strategiche e culminando in progetti reali o "capstone". Questo approccio a livelli aiuta i partecipanti a sviluppare competenze in modo graduale, mantenendo elevata la motivazione. Flessibilità e modularità restano centrali: gli utenti possono procedere al proprio ritmo, seguire i corsi in modalità audit prima di impegnarsi o scegliere programmi introduttivi brevi per un apprendimento rapido e accessibile.

Un'altra caratteristica distintiva è l'integrazione tra leadership, gestione del cambiamento e tecnologia. Coursera interpreta la trasformazione non solo come un processo tecnico, ma come un fenomeno profondamente legato alla governance, alla cultura organizzativa e alle persone. Molti corsi intrecciano queste dimensioni per favorire sia lo sviluppo strategico sia quello tecnico. Inoltre, la piattaforma pone l'accento sulla creazione di valore per il business, piuttosto che sul semplice utilizzo degli strumenti, mostrando come le tecnologie digitali possano trasformare modelli di business, strutture di governance e strategie competitive, allineando l'apprendimento a risultati misurabili.

L'analisi dei dati e la misurazione delle performance sono integrate nel design dell'apprendimento di Coursera, incoraggiando decisioni basate su evidenze e il miglioramento continuo. La piattaforma bilancia offerte brevi di sensibilizzazione con specializzazioni complete, risultando attrattiva sia per utenti occasionali sia per professionisti alla ricerca di competenze



approfondite. La maggior parte dei programmi si conclude con un progetto pratico o reale, rafforzando l'apprendimento applicato e i risultati tangibili.

Per differenziarsi dall'approccio di Coursera, le piattaforme emergenti potrebbero puntare maggiormente su simulazioni interattive e laboratori pratici che riflettano sfide organizzative reali. L'integrazione di mentoring tra pari, progetti collaborativi e casi studio localizzati migliorerebbe il coinvolgimento e la rilevanza contestuale. Dashboard avanzate per il tracciamento dei progressi aiuterebbero i partecipanti a visualizzare la propria crescita e i risultati ottenuti. L'offerta di micro-credenziali accumulabili e la combinazione di competenze tecniche e di leadership potrebbero creare esperienze di apprendimento più ricche e integrate.

Esempi di percorsi formativi Coursera rilevanti per le trasformazioni della metodologia ADMA

1. Foundations of AI and Machine Learning (Microsoft)

- Aree ADMA: Smart Manufacturing; Digital Factory
- Sintesi: Corso di livello intermedio che introduce i fondamenti dell'Intelligenza Artificiale e del machine learning, con particolare attenzione alla gestione dei dati, al preprocessing, al deployment dei modelli e all'infrastruttura. Il corso illustra come progettare e mantenere l'ossatura tecnica - dati, hardware e software - dei sistemi di IA.
- Link: <https://www.coursera.org/learn/foundations-of-ai-and-machine-learning>

2. AI Foundations for Everyone (IBM) Specialization

- Aree ADMA: Digital Factory; Smart Manufacturing; Human-centred Organization
- Sintesi: Specializzazione non tecnica che spiega cos'è l'IA, come può essere implementata in modo responsabile e come gestire i cambiamenti organizzativi, etici e di governance necessari per la sua adozione. Mira a sviluppare consapevolezza e comprensione di base, piuttosto che competenze tecniche avanzate.
- Link: <https://www.coursera.org/specializations/ai-foundations-for-everyone>

3. Strategic Leadership and Management Specialization (University of Illinois Urbana-Champaign)

- Aree ADMA: Human-centred Organization; Value Chain Oriented Open Factory; End-to-End Customer Focused Engineering
- Sintesi: Progettata per leader attuali e futuri, la specializzazione affronta temi quali leadership, cultura organizzativa, allineamento strategico, team building e gestione del cambiamento. Evidenzia come una leadership efficace e strutture organizzative adeguate favoriscano organizzazioni adattive e orientate al cliente.
- Link: <https://www.coursera.org/specializations/strategic-leadership>

4. Digital Marketing Specialization (University of Illinois Urbana-Champaign)

- Aree ADMA: End-to-End Customer Focused Engineering; Digital Factory; Value Chain Oriented Open Factory
- Sintesi: Focalizzata sulle moderne strategie di marketing digitale, sull'analisi dei dati, sul comportamento dei clienti e sulla misurazione delle performance. I partecipanti acquisiscono competenze nella mappatura dei customer journey, nella progettazione di campagne digitali e nella gestione di iniziative di marketing all'interno di ecosistemi interconnessi.
- Link: <https://www.coursera.org/specializations/digital-marketing>



4.2. EIT MANUFACTURING

L'European Institute of Innovation and Technology (EIT) è un organismo dell'Unione Europea, istituito nel 2008 con la missione di rafforzare l'innovazione in Europa attraverso il collegamento tra università, centri di ricerca e imprese. A tal fine, l'EIT opera tramite grandi comunità tematiche denominate KIC (Knowledge and Innovation Communities), ciascuna focalizzata su una sfida strategica quali energia sostenibile, salute, digitalizzazione, cambiamento climatico, materie prime, alimentazione e manifattura.

EIT Manufacturing è una di queste KIC ed è dedicata al settore della manifattura industriale e avanzata. Il suo obiettivo principale è rendere la manifattura europea più competitiva, digitale e sostenibile. Per raggiungere tale obiettivo, sviluppa attività lungo quattro principali linee di azione:

- **Innovazione:** supporto a progetti collaborativi tra imprese, centri di ricerca e università per lo sviluppo di nuove soluzioni manifatturiere.
- **Educazione:** offerta di programmi formativi per studenti, professionisti e PMI (master, corsi online, summer school, workshop), fornendo le competenze richieste dall'industria del futuro.
- **Creazione di impresa:** supporto a imprenditori, start-up e scale-up per portare sul mercato tecnologie e servizi innovativi per la manifattura.
- **Comunità:** costruzione di reti europee che connettano ecosistemi locali di innovazione industriale.

Dal punto di vista del benchmarking, il pilastro dell'educazione è particolarmente rilevante. Attraverso EIT Campus (<https://eit-campus.eu/courses>), EIT Manufacturing mette a disposizione un ampio catalogo di opportunità formative, che spaziano da moduli online brevi a programmi di master specializzati. Il portafoglio copre tematiche quali manifattura digitale, sostenibilità, leadership e imprenditorialità ed è progettato per servire diversi target: studenti, professionisti dell'industria e PMI.

Questa struttura riflette un approccio formativo completo, che combina competenze tecniche (ad es. digitalizzazione, automazione, manifattura sostenibile) e competenze trasversali (ad es. gestione dell'innovazione, leadership, imprenditorialità). In questo senso, EIT Manufacturing rappresenta un benchmark su come l'offerta formativa possa essere integrata in un ecosistema dell'innovazione più ampio, garantendo allineamento tra educazione, ricerca e bisogni industriali.

Esempi di corsi di formazione di interesse per le aree di trasformazione della metodologia ADMA:

- Leveraging Digital Twin Technology for Sustainable Manufacturing
 - Corso online, livello base.
 - Aree ADMA rilevanti: Digital Factory, ECO Factory, Advanced Manufacturing Technologies.
 - Descrizione: Introduce l'uso dei digital twin per migliorare l'efficienza, ridurre gli sprechi, ottimizzare le operazioni e rafforzare la sostenibilità.
 - Link: <https://eitmanufacturingacademy.eu/courses/leveraging-digital-twin-technology-for-sustainable-manufacturing-31925/>



- Driving Value Creation: Skills for a Sustainable and Inclusive Future
 - o Corso online, livello intermedio.
 - o Aree ADMA rilevanti: Human-centred Organization, ECO Factory, Value Chain Oriented Open Factory.
 - o Descrizione: Fornisce competenze per promuovere sostenibilità, inclusività e creazione di valore nell'industria. Si concentra su leadership, collaborazione e innovazione responsabile per allineare il business a obiettivi sociali e ambientali.
 - o Link: <https://eit-campus.eu/learning-path/driving-value-creation-skills-for-a-sustainable-and-inclusive-future>
- MSc in Human-Robot Interaction for Sustainable Manufacturing
 - o Programma master, livello avanzato (2 anni, doppio titolo).
 - o Aree ADMA rilevanti: Advanced Manufacturing Technologies, Smart Manufacturing, Human-centred Organization.
 - o Descrizione: Si focalizza sull'integrazione tra robotica e progettazione centrata sull'uomo nella manifattura sostenibile, combinando competenze tecniche con formazione in innovazione e imprenditorialità.
 - o Link: <https://www.eitmanufacturing.eu/what-we-do/education/master-school/msc-in-human-robot-interaction-for-sustainable-manufacturing/>
- MSc in Digital Manufacturing for Innovative Ecosystems
 - o Programma master, livello avanzato (2 anni, doppio titolo).
 - o Aree ADMA rilevanti: Digital Factory, Smart Manufacturing, Value Chain Oriented Open Factory.
 - o Descrizione: Affronta le tecnologie digitali per gli ecosistemi manifatturieri, inclusa l'integrazione dei sistemi, l'innovazione data-driven e la collaborazione lungo le catene del valore. Prepara i laureati a guidare la trasformazione digitale nelle reti industriali.
 - o Link: <https://www.eitmanufacturing.eu/what-we-do/education/master-school/msc-in-digital-manufacturing-for-innovative-ecosystems/>
- MSc in Zero Defect Manufacturing for a Circular Economy
 - o Programma master, livello avanzato (2 anni, doppio titolo).
 - o Aree ADMA rilevanti: Smart Manufacturing, ECO Factory, Advanced Manufacturing Technologies.
 - o Descrizione: Specializzato nella prevenzione dei difetti e nei metodi di produzione ad alta qualità, collega la Manifattura Avanzata ai principi dell'economia circolare, con focus su monitoraggio in tempo reale, ottimizzazione dei processi e pratiche sostenibili.
 - o Link: <https://www.eitmanufacturing.eu/what-we-do/education/master-school/msc-in-zero-defect-manufacturing-for-a-circular-economy/>
- Circular Economy – Sustainable Materials Management
 - o Corso online, livello base.
 - o Aree ADMA rilevanti: ECO Factory, Value Chain Oriented Open Factory.
 - o Descrizione: Introduce i principi della gestione sostenibile dei materiali, con particolare attenzione a riuso, riciclo e supply chain responsabili. Rivolto a professionisti che intendono integrare pratiche di economia circolare nella manifattura.
 - o Link: <https://eit-campus.eu/course/raw-materials/circular-economy-sustainable-materials-management>



- Artificial Intelligence and Circular Economy
 - o Corso online, livello base.
 - o Aree ADMA rilevanti: ECO Factory, Digital Factory, Smart Manufacturing.
 - o Descrizione: Illustra come l'Intelligenza Artificiale possa supportare strategie di economia circolare, dall'ottimizzazione dell'efficienza delle risorse allo sviluppo di nuovi modelli di business sostenibili, attraverso casi studio ed esempi pratici.
 - o Link: <https://eit-campus.eu/course/girls-go-circular/artificial-intelligence-and-the-circular-economy>

4.3. FRAUNHOFER-GESELLSCHAFT

La Fraunhofer-Gesellschaft (Fraunhofer Society) è una delle principali organizzazioni europee per la ricerca applicata, fondata nel 1949 in Germania, il cui obiettivo centrale è promuovere l'innovazione, il trasferimento tecnologico e il beneficio per la società, colmando il divario tra la ricerca accademica e l'applicazione industriale.

Fraunhofer opera attraverso circa 75 istituti e unità di ricerca indipendenti distribuiti su tutto il territorio tedesco, impiegando quasi 32.000 ricercatori, ingegneri e personale di supporto. Il budget annuale per la ricerca ammonta a circa 3,6 miliardi di euro, di cui circa 3,1 miliardi derivano da attività di ricerca commissionata da partner industriali e del settore pubblico.

La missione di Fraunhofer include l'affrontare sfide sociali urgenti - quali la trasformazione digitale, il cambiamento climatico, la transizione energetica, la sanità e le infrastrutture resilienti - attraverso lo sviluppo di soluzioni tecnologiche sostenibili ed eticamente responsabili. L'organizzazione collabora strettamente con università, imprese (di ogni dimensione), istituzioni pubbliche e partner internazionali per tradurre i risultati della ricerca in prodotti, servizi e processi efficaci.

I principali principi distintivi di Fraunhofer sono:

- Ricerca applicata e orientata al mercato: gran parte delle attività si svolge attraverso ricerca su commessa, sviluppo di prototipi e collaborazioni pubblico-private.
- Modello di finanziamento misto (finanziamento di base + finanziamento a progetto): i fondi di base provenienti dai governi federale e regionali consentono agli istituti di esplorare attività di ricerca precompetitiva di lungo periodo, mentre una quota significativa delle risorse deriva da progetti finanziati esternamente.
- Struttura interdisciplinare: i campi di ricerca includono, tra gli altri, bioeconomia, Intelligenza Artificiale, tecnologie quantistiche, efficienza delle risorse, sanità digitale e tecnologie dell'idrogeno.
- Trasferimento tecnologico ed ecosistema dell'innovazione: Fraunhofer supporta spin-off, attività di licensing e innovazione collaborativa, puntando ad accelerare l'applicazione dei risultati della ricerca nel mondo reale.

Fraunhofer mira a bilanciare l'avanzamento dell'eccellenza scientifica con la generazione di un impatto misurabile per l'industria e la società, in particolare sostenendo il coinvolgimento delle piccole e medie imprese nell'innovazione ad alta tecnologia e contribuendo alla competitività industriale della Germania e dell'Europa.



Esempi di corsi di formazione di interesse per le aree di trasformazione della metodologia ADMA:

T1. Advanced Manufacturing Technologies

- Fraunhofer Additive Academy – Additive Production Basic Training → formazione introduttiva che copre le tecnologie di manifattura additiva, i loro potenziali e le principali applicazioni.
- AM Basic Training – Design (Fraunhofer IAPT).

T2. Digital Factory

- Fraunhofer Academy – Smart Production Professional → affronta i temi della produzione intelligente, dei sensori, della manifattura additiva, del machine learning e delle tendenze emergenti.
- Smart Production Professional (Fraunhofer Academy).

T3. Eco-Factory

- Fraunhofer Academy – offerte formative generali nell’ambito di Energy and Sustainability presenti nel catalogo di formazione continua.
- Fraunhofer Academy – percorsi di aggiornamento professionale su temi legati a energia e sostenibilità.

T4. Customer-Oriented Integrated Engineering

- Fraunhofer Additive Academy – Design for Additive Production Training (DfAP) → focalizzato sulla progettazione, sull’integrazione funzionale e sulle strutture leggere.
- Design for Additive Production Training (Fraunhofer IAPT).

T5. People-Centred Organization

- Fraunhofer Academy – corsi professionali generali e programmi di certificazione progettati per professionisti e dirigenti industriali, inclusi temi di trasformazione e leadership.
- Fraunhofer Academy – corsi professionali per industria e management.

T6. Smart Manufacturing

- AMPOWER & Fraunhofer IAPT – Binder Jetting Training (hands-on) → corso altamente tecnico e pratico focalizzato su una specifica tecnologia avanzata di manifattura (binder jetting per metalli).
- Binder Jetting Training (AMPOWER + Fraunhofer IAPT).

T7. Open Factory Oriented to the Value Chain

- Programmi di formazione continua della Fraunhofer Academy in ambito produzione, logistica e integrazione dei processi, con focus sulla supply chain e sulla catena del valore.
- Fraunhofer Academy – percorsi di formazione continua in produzione, logistica e ambiti correlati.



4.4. MONDRAGON UNIBERTSITATEA

Mondragon Unibertsitatea (MU) è un'università cooperativa fondata nel 1997, il cui obiettivo è promuovere la conoscenza, l'innovazione e lo sviluppo sociale e imprenditoriale nei Paesi Baschi e a livello internazionale. La sua missione è strutturata attorno all'integrazione tra formazione, ricerca e trasferimento di conoscenza, mettendo in relazione studenti, imprese e centri di ricerca.

Mondragon Unibertsitatea opera attraverso facoltà e centri specializzati nei settori dell'ingegneria, del management, dell'educazione, delle scienze umane, della comunicazione e della gastronomia, collaborando strettamente con il tessuto imprenditoriale e industriale, in particolare in ambiti strategici quali la Manifattura Avanzata, la digitalizzazione, la sostenibilità, l'economia circolare e l'imprenditorialità.

L'obiettivo generale di Mondragon Unibertsitatea è formare professionisti competenti e innovativi e contribuire allo sviluppo tecnologico e sociale dell'industria e della società. Per perseguire tale obiettivo, l'università sviluppa attività articolate in quattro aree principali:

- Formazione: offerta di programmi di laurea triennale, magistrale, dottorato e percorsi di specializzazione rivolti a studenti, professionisti e imprese, fornendo le competenze richieste dall'industria del futuro.
- Innovazione e ricerca applicata: supporto a progetti di R&S in collaborazione con imprese e centri tecnologici, finalizzati alla risoluzione di sfide industriali concrete.
- Imprenditorialità: promozione di start-up, iniziative imprenditoriali e progetti di innovazione attraverso la Mondragon Team Academy e programmi dedicati.

Da una prospettiva comparativa, il pilastro della formazione risulta particolarmente rilevante. Mondragon Unibertsitatea offre un'ampia gamma di programmi, che spaziano dalla formazione continua e dalle micro-credenziali fino ai master ufficiali e ai programmi di dottorato specializzati. L'offerta copre ambiti quali la manifattura digitale, la robotica, l'Intelligenza Artificiale, la sostenibilità, l'economia circolare e la leadership, ed è progettata per rispondere alle esigenze di diversi gruppi target: studenti, professionisti in attività e PMI.

Questa struttura riflette un approccio formativo completo, che combina competenze tecniche (digitalizzazione, automazione, Manifattura Avanzata) e competenze trasversali (gestione dell'innovazione, imprenditorialità, leadership cooperativa). In questo senso, Mondragon Unibertsitatea costituisce un benchmark nell'educazione universitaria applicata all'industria e alla società, garantendo l'allineamento tra formazione, ricerca e bisogni del settore produttivo.

Esempi di corsi di formazione di interesse per le trasformazioni della metodologia ADMA:

T1. Advanced Manufacturing Technologies

- Master in Industrial Additive Manufacturing → stampa 3D in metalli, compositi e biomateriali.
- Formazione continua in Advanced Manufacturing Processes → lavorazioni di precisione, materiali compositi, tecniche ad alta produttività.
- Corso in Predictive Maintenance e Smart Maintenance.

T2. Digital Factory

- Master in Robotics and Control Systems → automazione e sistemi cyber-fisici.
- Corso in Digitalizzazione della Manutenzione Industriale → IoT, digital twin, sensoristica.
- Specializzazione in Cybersecurity in ambienti OT.



T3. Eco-Factory

- Master in Circular Economy and Industrial Sustainability.
- Corsi su Efficienza Energetica ed Energie Rinnovabili.
- Gestione sostenibile dei materiali lungo la catena del valore.

T4. Customer-Oriented Integrated Engineering

- Master in Industrial Engineering → progettazione e gestione di progetti di produzione orientati al cliente.
- Formazione in Product Design e User Experience (UX).
- Corsi in Simulazione e CAD/CAE/PLM applicati alla co-creazione.

T5. People-Centred Organization

- Master in Learning Facilitation and Leadership (MU Education).
- Formazione in Leadership Cooperativa e Gestione dei Team.
- Mondragon Team Academy (MTA): imprenditorialità e lavoro collaborativo.

T6. Smart Manufacturing

- Master in Robotics and Control Systems (automazione flessibile, cobot, IA applicata alla produzione).
- Corsi in Lean Manufacturing e Digital Six Sigma.
- Big Data e Intelligenza Artificiale per l'Industria.

T7. Open Factory Oriented to the Value Chain

- Programmi su Cooperativismo, Open Innovation ed Economia Sociale.
- Corso in Innovazione Collaborativa nelle Reti di Valore.
- Formazione executive in Industria 4.0 (4GUNE) → con focus sulle supply chain digitali.

4.5. POK (POLIMI OPEN KNOWLEDGE)

POK (POLIMI Open Knowledge) è la piattaforma ufficiale MOOC (Massive Open Online Course) del Politecnico di Milano, lanciata con l'obiettivo di promuovere un accesso aperto e inclusivo a un'istruzione di alta qualità. Sviluppata e gestita dal METID (Metodi e Tecnologie Innovative per la Didattica) dell'Ateneo, POK incarna l'impegno del Politecnico di Milano nella condivisione del sapere accademico e delle competenze scientifiche con un pubblico ampio, che include studenti, professionisti, cittadini ed educatori a livello internazionale.

A differenza dei marketplace formativi commerciali, POK opera all'interno del contesto di un'università pubblica, garantendo rigore accademico, contenuti basati sulla ricerca e allineamento con gli obiettivi istituzionali della didattica. La sua missione è colmare i divari educativi rendendo liberamente accessibili online le competenze scientifiche e tecnologiche del Politecnico di Milano.

Le attività e l'offerta di POK possono essere ricondotte a quattro principali dimensioni:

- MOOC accademici:

POK ospita un catalogo in costante crescita di corsi online gratuiti progettati da docenti e ricercatori del Politecnico di Milano. I corsi coprono un'ampia gamma di discipline - tra cui



Ingegneria, Architettura, Design, Informatica, Sostenibilità e Management - e sono strutturati per diversi tipi di pubblico, come studenti di laurea triennale e magistrale, ricercatori e cittadini.

- Formazione professionale e apprendimento permanente:

Oltre alla formazione accademica, POK offre MOOC rivolti a professionisti interessati all'aggiornamento continuo in ambiti emergenti quali Agile Project Management, Innovazione Digitale e Sviluppo Sostenibile. Questi corsi supportano il lifelong learning e contribuiscono a ridurre il divario tra mondo accademico e bisogni dell'industria.

- Open Knowledge e inclusione:

In linea con i principi dell'educazione aperta, tutti i corsi POK sono gratuiti e disponibili in più lingue (principalmente italiano e inglese). La piattaforma promuove l'inclusione raggiungendo gruppi di discenti eterogenei - dagli studenti delle scuole superiori ai cittadini senior - incoraggiando la partecipazione indipendentemente da barriere geografiche o sociali.

- Coinvolgimento università-comunità:

POK rafforza il legame tra il Politecnico di Milano e la società nel suo complesso. Attraverso MOOC orientati ai cittadini, come *Unfolding Gianfranco Ferré* o *City and Sustainability*, la piattaforma promuove consapevolezza culturale, sostenibilità e partecipazione civica, dimostrando come la conoscenza accademica possa contribuire alla comprensione pubblica e all'innovazione.

Dal punto di vista del benchmarking, POK rappresenta un modello di educazione digitale aperta guidato dall'università, che combina credibilità accademica e accessibilità. Il suo punto di forza risiede nell'integrazione di contenuti scientifici rigorosi con approcci pedagogici moderni - tra cui apprendimento auto-gestito, lezioni multimediali e valutazioni interattive - all'interno di un framework open-access.

Allineando l'innovazione didattica con l'eccellenza nella ricerca e nella didattica del Politecnico di Milano, POK si configura come un punto di riferimento per i MOOC istituzionali in Europa, dimostrando come le università possano sfruttare le piattaforme digitali per favorire l'apprendimento continuo, lo sviluppo professionale e l'impatto sociale.

Esempi di corsi di formazione di interesse per le aree di trasformazione della metodologia ADMA:

- Agile Project Management: Agile as a Culture, beyond the SCRUM
 - o Corso online, livello intermedio.
 - o Aree ADMA rilevanti: Human-centred Organization, Smart Manufacturing, Digital Factory.
 - o Descrizione: esplora il mindset Agile come approccio di trasformazione culturale e organizzativa; introduce modelli ibridi che combinano Agile e project management tradizionale per migliorare flessibilità, collaborazione e innovazione nei progetti di trasformazione digitale.
 - o Link:
https://www.pok.polimi.it/course/view.php?id=206&utm_source=chatgpt.com#tab2



- Platform Thinking: exploiting data through platforms
 - o Corso online, livello intermedio.
 - o Aree ADMA rilevanti: Digital Factory, Advanced Manufacturing Technologies, Smart Manufacturing.
 - o Descrizione: analizza come dati e piattaforme digitali generino nuovi modelli di business e reti di valore, con focus sulle dimensioni strategiche e tecnologiche dell'innovazione basata su piattaforme.
 - o Link: <https://www.pok.polimi.it/course/view.php?id=91#courseTabContent>
- Virtual and Augmented Reality to support training and maintenance
 - o Corso online, livello intermedio.
 - o Aree ADMA rilevanti: Advanced Manufacturing Technologies, Digital Factory, Smart Manufacturing, Human-centred Organization.
 - o Descrizione: introduce le applicazioni della Realtà Virtuale e Aumentata ai processi industriali, alla formazione e alla manutenzione, evidenziando come le tecnologie immersive migliorino performance, sicurezza e apprendimento negli ambienti manifatturieri.
 - o Link: <https://www.pok.polimi.it/course/view.php?id=172#courseTabContent>
- The Fashion Tech paradigm disrupting CCIs models
 - o Corso online, livello base.
 - o Aree ADMA rilevanti: Smart Manufacturing, ECO Factory, Value Chain Oriented Open Factory.
 - o Descrizione: analizza come tecnologia e innovazione digitale stiano ridefinendo design, produzione e distribuzione nel settore moda, esplorando la trasformazione sostenibile, digitale e data-driven degli ecosistemi manifatturieri creativi.
 - o Link: https://www.pok.polimi.it/course/view.php?id=66&utm_source=chatgpt.com#courseTabContent
- Innovation Management and Digital Transformation
 - o Corso online, livello intermedio.
 - o Aree ADMA rilevanti: Smart Manufacturing, Digital Factory, Advanced Manufacturing Technologies.
 - o Descrizione: introduce framework e strumenti per la gestione dell'innovazione in contesti di trasformazione digitale, con focus sull'interazione tra tecnologia, strategia e cultura organizzativa per rafforzare la competitività
 - o Link: <https://www.pok.polimi.it/course/view.php?id=207#courseTabContent>

4.6. UDEMY

Udemy è una piattaforma globale di apprendimento online fondata nel 2010 con la missione di migliorare la vita delle persone attraverso la formazione. Opera come un marketplace che mette in contatto discenti, docenti e organizzazioni, consentendo a chiunque di insegnare e apprendere nuove competenze online. A differenza delle istituzioni educative tradizionali, il modello di Udemy è aperto e decentralizzato: esperti e professionisti di tutto il mondo possono creare corsi e raggiungere un pubblico globale.



Le attività e l'offerta di Udemy possono essere raggruppate in quattro principali dimensioni:

- Marketplace dei corsi: Udemy ospita uno dei più grandi cataloghi di corsi online al mondo, con oltre 200.000 corsi su una vasta gamma di temi - dal business alla tecnologia, dallo sviluppo personale al design e all'apprendimento delle lingue. I corsi sono generalmente brevi, basati su video e fruibili in modalità auto-gestita.
- Miglioramento professionale: attraverso Udemy Business, la piattaforma offre soluzioni formative curate per aziende e organizzazioni, fornendo accesso a corsi di alta qualità focalizzati su competenze tecniche e professionali (ad es. data science, cloud computing, project management), oltre a soft skill e sviluppo della leadership.
- Ecosistema dei docenti: Udemy abilita istruttori ed esperti di dominio a progettare, pubblicare e monetizzare i propri corsi, favorendo un costante rinnovamento dei contenuti e una forte diversità dell'offerta.
- Comunità globale di apprendimento: con oltre 70 milioni di discenti a livello mondiale, Udemy ha costruito una comunità realmente globale, supportando più lingue e contenuti localizzati e promuovendo un accesso inclusivo all'educazione.

Dal punto di vista del benchmarking, Udemy rappresenta un riferimento chiave per l'educazione online flessibile e orientata alla domanda. Il suo successo risiede nella scalabilità del modello di marketplace digitale e nella varietà dell'offerta formativa, in grado di rispondere sia alle esigenze dei singoli discenti sia a quelle della formazione aziendale.

Grazie alla combinazione di contenuti tecnici (ad es. programmazione, IA, cloud computing) e competenze trasversali (comunicazione, leadership, innovazione), Udemy si è affermata come una delle principali piattaforme globali per l'apprendimento permanente, dimostrando come l'educazione possa essere erogata efficacemente su larga scala tramite piattaforme digitali.

Esempi di corsi di formazione di interesse per le trasformazioni della metodologia ADMA:

- Master Industry 4.0: Automation, Robotics & Cybersecurity
 - Corso online, livello base - progettato per discenti senza esperienza approfondita pregressa, sebbene una familiarità generale con sistemi ingegneristici o informatici sia utile.
 - Aree ADMA rilevanti: Advanced Manufacturing Technologies, Digital Factory, Smart Manufacturing.
 - Descrizione: fornisce una comprensione dei sistemi di automazione industriale, dell'implementazione dei Safety Instrumented Systems e della cybersecurity per i sistemi industriali, esplorando inoltre i fondamenti e le applicazioni della robotica.
 - Link: <https://www.udemy.com/course/master-industry-40-automation-robotics-cybersecurity/>
- Master Course in Sustainable Technologies & Datafication 2.0
 - Corso online, livello base - rivolto a studenti universitari e post-laurea in ambiti quali sistemi aziendali, IT e informatica, nonché a chiunque sia interessato alle tecnologie sostenibili.
 - Aree ADMA rilevanti: ECO Factory, Smart Manufacturing.
 - Descrizione: illustra come sfruttare tecnologie e dati per affrontare in modo efficace le sfide ambientali.
 - Link: <https://www.udemy.com/course/sustainable-technologies-datafication/>



- Industrial Digital Twins for Automation - Godot and CoDeSys
 - o Corso online, livello avanzato - progettato per ingegneri, sviluppatori ed esperti di automazione con conoscenze di base di programmazione PLC che desiderano approfondire le tecnologie di digital twin.
 - o Aree ADMA rilevanti: Advanced Manufacturing Technologies, Digital Factory, Smart Manufacturing.
 - o Descrizione: insegna a creare modelli interattivi di macchine e robot integrandoli con PLC per il virtual commissioning
 - o Link: <https://www.udemy.com/course/industrial-digital-twins-for-automation/>
- Robotics: Human-Robot Interaction - Theory & Applications
 - o Corso online, livello base.
 - o Aree ADMA rilevanti: Advanced Manufacturing Technologies, Human-centred Organization, Smart Manufacturing.
 - o Descrizione: fornisce una comprensione approfondita di come progettare, valutare e implementare sistemi di interazione uomo-robot (HRI) in grado di migliorare la collaborazione tra persone e robot
 - o Link: <https://www.udemy.com/course/robotics-human-robot-interaction-theory-and-applications/>

4.7. ELEMENTI COMUNI TRA GLI ORGANISMI DI FORMAZIONE ANALIZZATI

I sei fornitori di formazione analizzati (Coursera, EIT Manufacturing, Fraunhofer-Gesellschaft, Mondragon Unibertsitatea, POLIMI Open Knowledge e Udemy) presentano approcci differenti all'apprendimento e all'aggiornamento delle competenze. Tuttavia, nonostante le differenze in termini di natura istituzionale e ambito di intervento, emergono diversi elementi comuni che riflettono principi condivisi nella progettazione ed erogazione della formazione a supporto della trasformazione digitale e sostenibile. Tali elementi risultano altamente rilevanti per il framework ADMA e per l'obiettivo di LCAMP di costruire un catalogo formativo integrato e orientato alle PMI.

Tutti i fornitori condividono una forte attenzione all'occupabilità e allo sviluppo delle competenze. Le loro offerte formative sono progettate per costruire competenze direttamente applicabili in ambito industriale e per sostenere la crescita professionale. La copertura tematica risulta fortemente allineata con le aree di trasformazione ADMA, in particolare Digital Factory, Smart Manufacturing, ECO Factory e Value Chain Oriented Open Factory.

Le istituzioni analizzate si rivolgono a una platea ampia e diversificata, che comprende studenti universitari, professionisti nelle prime fasi di carriera, PMI e clienti corporate. I corsi sono progettati per diversi livelli di ingresso, che spaziano da programmi introduttivi o di sensibilizzazione (MOOC di livello base o corsi online brevi) fino a percorsi avanzati (master e formazione professionale specialistica).

Una tendenza chiara e trasversale a tutte le realtà analizzate è l'enfasi su flessibilità e modularità. L'apprendimento online e asincrono è predominante, spesso integrato da modalità



blended o in presenza. I corsi sono generalmente strutturati come moduli autonomi, percorsi di apprendimento o programmi di laurea, consentendo ai discenti di progredire in modo graduale in base alle proprie esigenze e al livello di maturità.

Tutte le entità mantengono inoltre un forte collegamento con l'industria e con gli ecosistemi dell'innovazione, rafforzando una visione condivisa della formazione come ponte tra istruzione, ricerca e pratica industriale.

L'attività di benchmarking evidenzia una forte concentrazione dell'offerta formativa nelle aree di trasformazione identificate nel Deliverable 7.2 come più deboli per le PMI. Tutte e sei le entità offrono corsi che contribuiscono direttamente o indirettamente al rafforzamento delle seguenti aree di trasformazione:

- Smart Manufacturing – automazione, Intelligenza Artificiale, manutenzione predittiva e gestione dei dati in tempo reale.
- Digital Factory – integrazione dei sistemi, digital twin e cybersecurity.
- ECO Factory – produzione sostenibile, economia circolare, efficienza delle risorse e dell'energia.
- Value Chain Oriented Open Factory – open innovation, collaborazione lungo le reti di fornitura e progettazione guidata dal cliente.

Nel loro insieme, questi fornitori dimostrano come ecosistemi formativi efficaci combinino flessibilità, modularità e un forte legame con l'industria per supportare l'apprendimento permanente e la trasformazione digitale. Le pratiche comuni individuate rappresentano una fonte di ispirazione rilevante per i partner LCAMP nella strutturazione della propria offerta formativa, garantendo che i nuovi corsi o quelli adattati siano allineati alle esigenze delle PMI, supportino i percorsi di trasformazione ADMA e consentano una progressione misurabile della maturità digitale e sostenibile.



5. CONCLUSIONI

Il lavoro svolto nell'ambito del WP7 fornisce una comprensione approfondita di come le PMI possano essere efficacemente supportate nel loro percorso di transizione verso l'Industria 4.0 e 5.0 attraverso metodologie strutturate, strumenti diagnostici e strategie formative mirate. Integrando framework concettuali quali ADMA e Collaborative Learning Factory (CLF) con evidenze pratiche derivate dalle analisi delle PMI (i.e. ADMA Scans), piani di implementazione e un catalogo formativo strutturato, il progetto ha posto solide basi per un'offerta di apprendimento pienamente allineata ai reali bisogni industriali e ai percorsi di maturità digitale.

L'analisi dei report precedenti dimostra che la metodologia ADMA rimane un framework solido per la valutazione della prontezza digitale e per l'orientamento dei processi di trasformazione nelle PMI. Le sue sette aree di trasformazione forniscono un linguaggio strutturato per identificare punti di forza, debolezze e priorità di sviluppo. Parallelamente, il concetto di CLF evidenzia come i centri IFP possano operare come laboratori viventi, capaci di replicare ambienti industriali reali e di supportare l'apprendimento esperienziale. Le complementarità tra ADMA e CLF confermano la fattibilità di un collegamento efficace tra diagnosi della maturità industriale e progettazione pedagogica, costituendo una base solida per percorsi formativi personalizzati.

Le analisi delle PMI condotte in otto Paesi rivelano un panorama eterogeneo in termini di livelli di maturità, ma anche una serie di schemi ricorrenti. Emergono chiaramente punti di forza nell'orientamento al cliente e nell'organizzazione centrata sull'uomo, mentre le aree di debolezza risultano coerenti tra le diverse regioni: limitata automazione e uso dei dati in tempo reale (Smart Manufacturing), difficoltà nell'integrazione dei sistemi (Digital Factory), collaborazione insufficiente lungo la catena del valore e implementazione disomogenea delle pratiche di sostenibilità (ECO Factory). Tali evidenze orientano direttamente le priorità del catalogo formativo, giustificando una forte enfasi su digitalizzazione, sostenibilità, produzione data-driven e innovazione collaborativa.

Il WP7 ha portato alla realizzazione di un catalogo strutturato di 109 attività formative, tutte allineate ad almeno una delle aree di trasformazione ADMA. Il catalogo include 31 corsi dalla Spagna, 18 dall'Italia, 11 dalla Turchia, 10 dal Canada, 10 dalla Francia, 10 dalla Slovenia, 10 dalla Svezia e 9 dalla Germania. Tutte le aree di trasformazione ADMA sono coperte da almeno alcune offerte formative, con una rappresentazione particolarmente forte in Advanced Manufacturing Technologies, Digital Factory e Smart Manufacturing. Ciò conferma sia la rilevanza di questi ambiti per le PMI sia la capacità dell'ecosistema IFP di rispondere alle loro esigenze di trasformazione.

Il sistema di doppia indicizzazione sviluppato nel WP7 si dimostra essenziale per garantire l'usabilità e la rilevanza strategica dell'offerta formativa. Collegare ogni opportunità formativa sia a una specifica area di trasformazione ADMA sia a un livello di progressione della maturità consente alle PMI di navigare il catalogo in funzione delle proprie esigenze, capacità e obiettivi strategici. Questa struttura supporta un apprendimento graduale, favorisce decisioni informate e aiuta i fornitori IFP a progettare interventi formativi coerenti con le reali sfide industriali.

Il benchmarking di sei fornitori internazionali di formazione (Coursera, EIT Manufacturing, Fraunhofer-Gesellschaft, Mondragon Unibertsitatea, POLIMI Open Knowledge e Udemy) conferma la rilevanza e la completezza dell'approccio formativo di LCAMP. Nonostante la loro eterogeneità, queste istituzioni condividono principi fondamentali: forte attenzione all'occupabilità, formati formativi modulari e flessibili, percorsi di apprendimento multilivello e



costante allineamento con la pratica industriale. I loro portafogli affrontano in modo coerente le stesse aree di debolezza individuate nelle PMI, in particolare Smart Manufacturing, Digital Factory, ECO Factory e Value Chain Oriented Open Factory. Questa convergenza valida l'impostazione del catalogo formativo LCAMP e mette in evidenza buone pratiche che possono essere adottate o adattate.

Le evidenze combinate derivanti dalle analisi di maturità (i.e. ADMA Scans), dai modelli educativi CLF, dal catalogo formativo di 109 corsi orientati alle PMI e dal benchmarking esterno indicano una chiara direzione strategica per LCAMP. Lo sviluppo futuro e il perfezionamento del catalogo dovrebbero:

- dare priorità alla formazione che accelera la maturità nelle aree di trasformazione più deboli;
- rafforzare i punti di forza nell'orientamento al cliente e nell'organizzazione centrata sull'uomo;
- promuovere percorsi di apprendimento modulari, flessibili e orientati alla progressione;
- costruire forti collegamenti tra centri IFP, PMI ed ecosistemi dell'innovazione;
- integrare sostenibilità, digitalizzazione e centralità della persona come elementi trasversali in tutte le offerte formative.

In conclusione, il WP7 ha generato una base coerente e fondata su evidenze per un catalogo formativo in grado di supportare le PMI nella loro trasformazione verso modelli più digitali, sostenibili, resilienti e centrati sull'uomo. Questo catalogo non solo risponde ai bisogni industriali attuali, ma contribuisce anche a definire le competenze necessarie per la prossima generazione del manifatturiero europeo.

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