



Manifesto Laurea Magistrale in Informatica - anno accademico 2023-24

AD Code ESSE3	CORSO	COURSES	SSD ACADEMIC DISCIPLINE	CFU CREDITS	TAF TRAINING ACTIVITY	ANNO YEAR	SEMESTRE SEMESTER	CREDITI DA SCEGLIERE CREDITS TO CHOOSE	TE NOTES	Docente TITOLARE COGNOME PROFESSOR	Docente TITOLARE NOME
Percorso ICT Innovation											
Specialization area: Cyber Security (CSE) (1st year: Entry Point EIT)											
<i>Innovation and Entrepreneurship</i>								24			
145936	Innovation and Entrepreneurship Basic		SECS-P/10	6	Affine	1	1			Angeli	Lorenzo
145288	Business Development Laboratory		SECS-P/08	9	Affine	1	2		*	Formentini	Marco
145455	ICT Innovation		ING-INF/05	9	Car.	1	2		**	Formentini	Marco
<p>(*) 145288 Business Development Laboratory - In via sperimentale nell'ambito del progetto per il miglioramento della qualità ed interdisciplinarietà dei corsi di Innovation & Entrepreneurship (I&E) di EIT Digital il corso sarà allineato per 8 CFU con il corso di Start-Up Lab presso il DEM e per 1 CFU mediante l'offerta I&E On-Line di EIT Digital. As part of the project for the improvement of the quality and interdisciplinary nature of the EIT Digital Innovation & Entrepreneurship (I&E) courses, the course will be aligned for 8 CFU with the Start-Up Lab course at the DEM and for 1 CFU through the I&E On-Line offer of EIT Digital.</p>											
<p>(**) 145455 ICT Innovation - Il corso include obbligatoriamente per gli studenti in doppia laurea EIT Digital il risultato della Summer School EIT Digital. Gli studenti non in doppia laurea EIT Digital e che non avessero partecipato alla Summer School compenseranno i crediti relativi con opportune attività in tema di I&E inclusa possibilmente la partecipazione alle attività I&E Improvement per il miglioramento della qualità. The course includes the EIT Digital Summer School result for students in double EIT Digital degrees. Students who are not in the double EIT Digital program and who have not attended the Summer School will compensate the relative credits with appropriate I&E activities including the possible participation in I&E Improvement activities for quality improvement.</p>											
<i>Mandatory courses</i>								24			
145323	Privacy and Intellectual Property Rights		ING-INF/05	6	Car.	1	1			D'Andrea	Vincenzo
145322	Security Testing		INF/01	6	Car.	1	1			Marchetto	Alessandro
145622	Cyber Security Risk Assessment		ING-INF/05	6	Car.	1	2		*	Sartori	Pierluigi
145065	Network Security		INF/01	6	Car.	1	2			Crispo	Bruno
<p>(*) 145622 Cyber Security Risk Assessment - Per allineare i contenuti avanzati con i corsi ET Digital del I anno, si raccomanda di seguire questi corsi solo agli studenti che abbiano già frequentato il corso di Introduction to Computer e Network security, e preferibilmente anche Applied Cryptography e Security Testing (o corsi alternativi a seconda del proprio percorso od ateneo). To align advanced contents with 1st year ET Digital courses, it is recommended to follow these courses only for students who have already attended the course of Introduction to Computer and Network security, and preferably also Applied Cryptography and Security Testing (or alternative courses depending on of their own studies or university).</p>											



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<i>Additional courses</i>								12			
<i>Selezionare 12 CFU tra quelli elencati nella tabella precedente (corsi che non siano già stati scelti) o nella seguente tabella /select 12 CFU among those listed in the previous table or the one below</i>											
145062	Machine learning		INF/01	6	Car.	1	1			Passerini	Andrea
145937	Introduction to Computer and Network Security		INF/01	6	Car.	1	1			Ranise	Silvio
145396	Formal Techniques for Cryptographic Protocol Analysis		INF/01	6	Car.	1	2			Zunino	Roberto
146122	Ethics for computer science and engineering		ING-INF/05	6	Car.	1	2			Brusseau	James
146219	Ethical Hacking		INF/01	6	Car.	1	2			Crispo	Bruno
146157	Blockchain		INF/01	6	Car.	1	2			Telesca	Luigi
146221	Challenge-Based Activity		ING-INF/05	6	Car.	1-2	1-2			DISI Faculty	
145614	Multimedia Data Security		ING-INF/03	6	Scelta	1-2	1			Tace nel 23-24	
Specialization area: Cyber Security (CSE) (2nd year: Exit Point EIT)											
<i>Innovation and Entrepreneurship</i>											
								6			
145623	Innovation and Entrepreneurship Studies in ICT		INF/01	6	Car.	2	1			Marchese	Maurizio
<i>Additional courses</i>								24			
145777	Applied Cryptography		INF/01	6	Car.	2	1			Calderini	Marco
146220	Security experiments: attacks and defenses		ING-INF/05	12	Car/Scelta	2	1		*	Massacci	Fabio
145301	Project course		ING-INF/05	6	Car/Scelta	2	1			DISI Faculty	
145289	Research Project		INF/01	12	Car/Scelta	2	1			DISI Faculty	
145322	Security Testing		INF/01	6	Car/Scelta	2	1			Marchetto	Alessandro
145062	Machine learning		INF/01	6	Car/Scelta	2	1			Passerini	Andrea
145323	Privacy and Intellectual Property Rights		ING-INF/05	6	Car/Scelta	2	1			D'Andrea	Vincenzo
145972	High-Performance Computing for Data Science		ING-INF/05	6	Car./Scelta	2	1			Fiore	Sandro



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AD <i>Code ESSE3</i>	CORSO	COURSES	SSD <i>ACADEMIC DISCIPLINE</i>	CFU <i>CREDITS</i>	TAF <i>TRAINING ACTIVITY</i>	ANNO <i>YEAR</i>	SEMESTRE <i>SEMESTER</i>	CREDITI DA SCEGLIERE <i>CREDITS TO CHOOSE</i>	TE <i>NOTES</i>	Docente TITOLARE COGNOME <i>PROFESSOR</i>	Docente TITOLARE NOME
145614	Multimedia Data Security		ING-INF/03	6	Scelta	2	1			Tace nel 23-24	
<p>(*) Security experiments: attacks and defenses - Per allineare i contenuti avanzati con i corsi ET Digital del II anno, si raccomanda di seguire questo corso solo agli studenti che abbiano già frequentato entrambi i corsi di "Network Security" e di "Security Testing" (o corsi alternativi a seconda del proprio percorso od ateneo). To align advanced contents with 2nd year ET Digital a seconda, it is recommended to follow this course only for students who have already attended both the "Network Security" and "Security Testing" courses (or alternative courses depending on their studies or university).</p> <p>Gli studenti non possono scegliere un corso già scelto in passato. Un corso non può essere scelto due volte neppure se la scelta è fatta in un'altra Università. Students cannot choose a course that has been already chosen in the past. A course cannot be chosen twice even if the choice is made at a different University.</p>											
145098	Internship							6			
145302	Thesis							24			
							Tot	120			
Specialization area: Software and Service Architectures (SSA) (1st year)											
<i>Innovation and Entrepreneurship</i>											
								24			
145936	Innovation and Entrepreneurship Basic		SECS-P/10	6	Affine	1	1			Angeli	Lorenzo
145288	Business Development Laboratory		SECS-P/08	9	Affine	1	2		*	Formentini	Marco
145455	ICT Innovation		ING-INF/05	9	Car.	1	2		**	Formentini	Marco
<p>(*) 145288 Business Development Laboratory - In via sperimentale nell'ambito del progetto per il miglioramento della qualità ed interdisciplinarietà dei corsi di Innovation & Entrepreneurship (I&E) di EIT Digital il corso sarà allineato per 8 CFU con il corso di Start-Up Lab presso il DEM e per 1 CFU mediante l'offerta I&E On-Line di EIT Digital. As part of the project for the improvement of the quality and interdisciplinary nature of the EIT Digital Innovation & Entrepreneurship (I&E) courses, the course will be aligned for 8 CFU with the Start-Up Lab course at the DEM and for 1 CFU through the I&E On-Line offer of EIT Digital.</p>											



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AD Code ESSE3	CORSO	COURSES	SSD ACADEMIC DISCIPLINE	CFU CREDITS	TAF TRAINING ACTIVITY	ANNO YEAR	SEMESTRE SEMESTER	CREDITI DA SCEGLIERE CREDITS TO CHOOSE	TE NOTES	Docente TITOLARE COGNOME PROFESSOR	Docente TITOLARE NOME
<p>(**) 145455 ICT Innovation - Il corso include obbligatoriamente per gli studenti in doppia laurea EIT Digital il risultato della Summer School EIT Digital. Gli studenti non in doppia laurea EIT Digital e che non avessero partecipato alla Summer School compenseranno i crediti relativi con opportune attività in tema di I&E inclusa possibilmente la partecipazione alle attività I&E Improvement per il miglioramento della qualità. The course includes the EIT Digital Summer School result for students in double EIT Digital degrees. Students who are not in the double EIT Digital program and who have not attended the Summer School will compensate the relative credits with appropriate I&E activities including the possible participation in I&E Improvement activities for quality improvement.</p>											
<i>Mandatory Technical courses</i>								24			
145810	Service Design and Engineering		ING-INF/05	6 Car.		1	1			Marchese	Maurizio
145459	Participatory Design		ING-INF/05	6 Car.		1	1			D'Andrea	Vincenzo
145937	Introduction to Computer and Network Security		INF/01	6 Car.		1	1			Ranise	Silvio
146066	Human-Computer Interaction		ING-INF/05	6 Car.		1	2			Turchet	Luca
146223	Distributed systems		ING-INF/05	6 Car		1	2			Picco	Gian Pietro
<i>Additional courses</i>								12			
145763	Bio-Inspired Artificial Intelligence		ING-INF/05	6 Car		1	1			Iacca	Giovanni
145323	Privacy and Intellectual Property Rights		ING-INF/05	6 Car		1	1			D'Andrea	Vincenzo
145062	Machine learning		INF/01	6 Car		1	1			Passerini	Andrea
145867	Autonomous Software Agents		ING-INF/05	6 Car		1	2			Giorgini	Paolo
145622	Cyber Security Risk Assessment		ING-INF/05	6 Car		1	2		*	Sartori	Pierluigi
145865	Optimization techniques		INF/01	6 Car		1	2			Iacca	Giovanni
145301	Project course		ING-INF/05	6 Car		1-2	2-1			DISI Faculty	
146221	Challenge-Based Activity		ING-INF/05	6 Car.		1-2	1-2			DISI Faculty	
<p>(*) 145622 Cyber Security Risk Assessment - Per allineare i contenuti avanzati con i corsi ET Digital del I anno, si raccomanda di seguire questi corsi solo agli studenti che abbiano già frequentato il corso di Introduction to Computer e Network security, e preferibilmente anche Applied Cryptography e Security Testing (o corsi alternativi a seconda del proprio percorso od ateneo). To align advanced contents with 1st year ET Digital courses, it is recommended to follow these courses only for students who have already attended the course of Introduction to Computer and Network security, and preferably also Applied Cryptography and Security Testing (or alternative courses depending on of their own studies or university).</p>											



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Specialization area: Software and Service Architectures (SSA) (2nd year)										
<i>Mandatory</i>							6			
145623	Innovation and Entrepreneurship Studies in ICT	INF/01	6	Car.	2	1			Marchese	Maurizio
<i>Additional courses</i>							24			
145453	Data Mining	ING-INF/05	6	Car/Scelta	2	1			Velegrakis	Yannis
145937	Introduction to Computer and Network Security	INF/01	6	Car/Scelta	2	1			Ranise	Silvio
145062	Machine learning	INF/01	6	Car/Scelta	2	1			Passerini	Andrea
145323	Privacy and Intellectual Property Rights	ING-INF/05	6	Car/Scelta	2	1			D'Andrea	Vincenzo
145322	Security Testing	INF/01	6	Car/Scelta	2	1			Marchetto	Alessandro
146221	Challenge-Based Activity	ING-INF/05	6	Car.	1-2	1-2			DISI Faculty	
145301	Project course	ING-INF/05	6	Car/Scelta	2	1			DISI Faculty	
Gli studenti non possono scegliere un corso già scelto in passato. Un corso non può essere scelto due volte neppure se la scelta è fatta in un'altra Università. Students cannot choose a course that has been already chosen in the past. A course cannot be chosen twice even if the choice is made at a different University.										
145098	Internship						6			
145302	Thesis						24			
						TOT	120			
Specialization area: Data Science (DS) (1st year)										
<i>Innovation and Entrepreneurship</i>							24			
145936	Innovation and Entrepreneurship Basic	SECS-P/10	6	Affine	1	1			Angeli	Lorenzo
145288	Business Development Laboratory	SECS-P/08	9	Affine	1	2		*	Formentini	Marco
145455	ICT Innovation	ING-INF/05	9	Car.	1	2		**	Formentini	Marco



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<p>(**) 145455 ICT Innovation - Il corso include obbligatoriamente per gli studenti in doppia laurea EIT Digital il risultato della Summer School EIT Digital. Gli studenti non in doppia laurea EIT Digital e che non avessero partecipato alla Summer School compenseranno i crediti relativi con opportune attività in tema di I&E inclusa possibilmente la partecipazione alle attività I&E Improvement per il miglioramento della qualità. The course includes the EIT Digital Summer School result for students in double EIT Digital degrees. Students who are not in the double EIT Digital program and who have not attended the Summer School will compensate the relative credits with appropriate I&E activities including the possible participation in I&E Improvement activities for quality improvement.</p>											
<i>Mandatory courses</i>								24			
145453	Data Mining		ING-INF/05	6 Car.		1	1			Velegrakis	Yannis
146114	Knowledge Graph Engineering		ING-INF/05	6 Car.		1	1			Giunchiglia	Fausto
145062	Machine learning		INF/01	6 Car		1	1			Passerini	Andrea
145323	Privacy and Intellectual Property Rights		ING-INF/05	6 Car.		1	1			D'Andrea	Vincenzo
145053	Laboratory of Biological Data Mining		ING-INF/05	6 Car.		1	1			Blanzieri	Enrico
146066	Human-Computer Interaction		ING-INF/05	6 Car.		1	2			Turchet	Luca
<i>Additional courses</i>								12			
145763	Bio-Inspired Artificial Intelligence		ING-INF/05	6 Car		1	1			Iacca	Giovanni
145896	Statistical Methods		INF/01	6 Car		1	1			Coghi	Michele
145865	Optimization techniques		INF/01	6 Car		1	2			Iacca	Giovanni
145966	Statistical Models		INF/01	6 Car		1	2			Vinciotti	Veronica
145764	Deep learning		ING-INF/05	6 Car		1	2		*	Ricci	Elisa
146223	Distributed Systems		ING-INF/05	6 Car		1	2			Picco	Gian Pietro
145771	Fog and Cloud Computing		ING-INF/05	6 Car		1	2			Siracusa	Domenico
(*) 145764 Deep learning - It is required as a prerequisite: 145062 - Machine learning											



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Specialization area: Data Science (DS) (2nd year: Exit Point EIT)											
<i>Mandatory</i>								6			
145623	Innovation and Entrepreneurship Studies in ICT		INF/01	6	Car.	2	1			Marchese	Maurizio
<i>Additional courses</i>								24			
145585	Quantum Machine Learning		ING-INF/05	6	Car/Scelta	2	1			Blanzieri	Enrico
145453	Data Mining		ING-INF/05	6	Car/Scelta	2	1			Velegrakis	Yannis
146114	Knowledge Graph Engineering		ING-INF/05	6	Car/Scelta	2	1			Giunchiglia	Fausto
145520	Affective computing		ING-INF/05	6	Car/Scelta	2	1			Sebe	Niculae
145851	Advanced computing architectures		ING-INF/01	6	Scelta	2	1			Passerone	Roberto
145323	Privacy and Intellectual Property Rights		ING-INF/05	6	Car/Scelta	2	1			D'Andrea	Vincenzo
145972	High-Performance Computing for Data Science		ING-INF/05	6	Car./Scelta	2	1			Fiore	Sandro
<p>Gli studenti non possono scegliere un corso già scelto in passato. Un corso non può essere scelto due volte neppure se la scelta è fatta in un'altra Università. Students cannot choose a course that has been already chosen in the past. A course cannot be chosen twice even if the choice is made at a different University.</p>											
145098	Internship							6			
145302	Thesis							24			
								TOT			
								120			
Specialization area: Embedded System (ES) (1st year)											
<i>Innovation and Entrepreneurship</i>								24			
145936	Innovation and Entrepreneurship Basic		SECS-P/10	6	Affine	1	1			Angeli	Lorenzo
145288	Business Development Laboratory		SECS-P/08	9	Affine	1	2		*	Formentini	Marco
145455	ICT Innovation		ING-INF/05	9	Car.	1	2		**	Formentini	Marco



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<p>(**) 145455 ICT Innovation - Il corso include obbligatoriamente per gli studenti in doppia laurea EIT Digital il risultato della Summer School EIT Digital. Gli studenti non in doppia laurea EIT Digital e che non avessero partecipato alla Summer School compenseranno i crediti relativi con opportune attività in tema di I&E inclusa possibilmente la partecipazione alle attività I&E Improvement per il miglioramento della qualità. The course includes the EIT Digital Summer School result for students in double EIT Digital degrees. Students who are not in the double EIT Digital program and who have not attended the Summer School will compensate the relative credits with appropriate I&E activities including the possible participation in I&E Improvement activities for quality improvement.</p>											
Mandatory								18			
146217	Software Development for Collaborative Robotics		ING-INF/05	6 Car.		1	1			Palopoli	Luigi
145062	Machine learning		INF/01	6 Car		1	1			Passerini	Andrea
145874	Robot Planning and its application		ING-INF/05	6 Car		1	1			Palopoli	Luigi
145056	Formal methods		ING-INF/05	12 Car.		1	2			Sebastiani	Roberto
145851	Advanced computing architectures		ING-INF/01	6 Car.		1	1			Passerone	Roberto
Additional courses								18			
145811	Low-power wireless networking for the Internet of Things		ING-INF/05	6 Car		1	1			Picco	Gian Pietro
140502	Embedded Systems		ING-INF/01	9 Scelta		1	1			Brunelli	Davide
145764	Deep learning		ING-INF/05	6 Car		1	2		*	Ricci	Elisa
146223	Distributed Systems		ING-INF/05	6 Car		1	2			Picco	Gian Pietro
140500	Automatic Control		ING-INF/04	9 Scelta		1	2			Zaccarian	Luca
<p>(*) 145764 Deep learning - It is required as a prerequisite: 145062 - Machine learning</p>											
<p>Gli studenti che non partecipano al programma di Doppia Laurea EIT Digital Master School e quindi fanno entrambi gli anni presso UNITN non possono fare più di 24 CFU complessivi nei settori ING-INF/01, ING-INF/04</p>											
Specialization area: Embedded Systems (2nd year: Exit Point EIT)											
Mandatory								6			



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145623	Innovation and Entrepreneurship Studies in ICT		INF/01	6	Car.	2	1			Marchese	Maurizio
								24			
<i>Additional courses</i>											
145851	Advanced computing architectures		ING-INF/01	6	Scelta	2	1			Passerone	Roberto
145874	Robot Planning and its application		ING-INF/05	6	Car/Scelta	2	1			Palopoli	Luigi
145811	Low-power wireless networking for the Internet of Things		ING-INF/05	6	Car/Scelta	2	1			Picco	Gian Pietro
146217	Software Development for Collaborative Robotics		ING-INF/05	6	Car/Scelta	2	1			Palopoli	Luigi
146042	Distributed robot perception		ING-INF/07	6	Scelta	2	1			Fontanelli	Daniele
145301	Project course		ING-INF/05	6	Car/Scelta	2	1			DISI Faculty	
145289	Research Project		INF/01	12	Car/Scelta	2	1			DISI Faculty	
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145098	Internship							6			
145302	Thesis							24			
							TOT	120			
Specialization area: Finance Technology (Fintech) (1st year: Entry Point EIT)											
Innovation and Entrepreneurship								24			
145936	Innovation and Entrepreneurship Basic		SECS-P/10	6	Affine	1	1			Angeli	Lorenzo
145288	Business Development Laboratory		SECS-P/08	9	Affine	1	2		*	Formentini	Marco
145455	ICT Innovation		ING-INF/05	9	Car.	1	2		**	Formentini	Marco



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<p>(*) 145288 Business Development Laboratory - In via sperimentale nell'ambito del progetto per il miglioramento della qualità ed interdisciplinarietà dei corsi di Innovation & Entrepreneurship (I&E) di EIT Digital il corso sarà allineato per 8 CFU con il corso di Start-Up Lab presso il DEM e per 1 CFU mediante l'offerta I&E On-Line di EIT Digital. As part of the project for the improvement of the quality and interdisciplinary nature of the EIT Digital Innovation & Entrepreneurship (I&E) courses, the course will be aligned for 8 CFU with the Start-Up Lab course at the DEM and for 1 CFU through the I&E On-Line offer of EIT Digital.</p> <p>(**) 145455 ICT Innovation - Il corso include obbligatoriamente per gli studenti in doppia laurea EIT Digital il risultato della Summer School EIT Digital. Gli studenti non in doppia laurea EIT Digital e che non avessero partecipato alla Summer School compenseranno i crediti relativi con opportune attività in tema di I&E inclusa possibilmente la partecipazione alle attività I&E Improvement per il miglioramento della qualità. The course includes the EIT Digital Summer School result for students in double EIT Digital degrees. Students who are not in the double EIT Digital program and who have not attended the Summer School will compensate the relative credits with appropriate I&E activities including the possible participation in I&E Improvement activities for quality improvement.</p>											
Mandatory								24			
145062	Machine learning		INF/01	6	Car	1	1			Passerini	Andrea
145937	Introduction to Computer and Network Security		INF/01	6	Car.	1	1			Ranise	Silvio
145622	Cyber Security Risk Assessment		ING-INF/05	6	Car.	1	2		*	Sartori	Pierluigi
145764	Deep learning		ING-INF/05	6	Car	1	2		**	Ricci	Elisa
145586	Game Theory		ING-INF/05	6	Car	1	2			Kuper	Gabriel
Additional courses								12			
145763	Bio-Inspired Artificial Intelligence		ING-INF/05	6	Car	1	1			Iacca	Giovanni
145300	Concurrency		INF/01	6	Car	1	1			Quaglia	Paola
145590	International Accounting and Finance I: International Accounting		SECS-P/07	6	Scelta	1	1		*	Pesci	Caterina
145896	Statistical Methods		INF/01	6	Car	1	1			Coghi	Michele
121414	Workshop on Financial Simulation		SECS-S/03	6	Scelta	1	1			Bee	Marco
145591	International Accounting and Finance II: International Corporate Finance		SECS-P/11	6	Scelta	1	2		**	Chatterjee	Ujjal Kanti
145966	Statistical Models		INF/01	6	Car	1	2			Vinciotti	Veronica
146223	Distributed Systems		ING-INF/05	6	Car	1	2			Picco	Gian Pietro
145867	Autonomous Software Agents		ING-INF/05	6	Car	1	2			Giorgini	Paolo



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145972	High-Performance Computing for Data Science		ING-INF/05	6	Car.	1-(2)	1			Fiore	Sandro
146157	Blockchain		INF/01	6	Scelta	1	2			Telesca	Luigi
<p>(*) 145590 International Accounting and Finance I: International Accounting - Per allineare i contenuti avanzati con i corsi ET Digital del I anno, si raccomanda di seguire questi corsi solo agli studenti che abbiano già frequentato il corso di Economia e misurazione aziendale [120006] or Introduction to Accounting (o corsi alternativi a seconda del proprio percorso od ateneo). To align advanced contents with 1st year ET Digital courses, it is recommended to follow these courses only for students who have already attended the course of Economia e misurazione aziendale [120006] or Introduction to Accounting (or alternative courses depending on of their own studies or university).</p> <p>(**) 145591 International Accounting and Finance II: International Corporate Finance -Per allineare i contenuti avanzati con i corsi ET Digital del I anno, si raccomanda di seguire questi corsi solo agli studenti che abbiano già frequentato il corso di 120114 Finanza aziendale [120114] (o corsi alternativi a seconda del proprio percorso od ateneo). To align advanced contents with 1st year ET Digital courses, it is recommended to follow these courses only for students who have already attended the course of Finanza aziendale [120114] (or alternative courses depending on of their own studies or university).</p> <p>Gli studenti che non partecipano al programma di Doppia Laurea EIT Digital Master School e quindi fanno entrambi gli anni presso UNITN non possono fare più di 24 CFU complessivi nei settori SECS-P/07, SECS-P/11, SECS-S/03, SECS-P/01, SECS-S/06</p>											
Specialization area: Finance Technology (Fintech) - 2nd year: Exit Point EITfrom 2021/2022											
Mandatory								6			
145623	Innovation and Entrepreneurship Studies in ICT		INF/01	6	Car.	2	1			Marchese	Maurizio
Additional courses								24			
121416	Risk Management		SECS-S/06	6	Scelta	2	1			Paterlini	Sandra
145300	Concurrency		INF/01	6	Car/Scelta	2	1			Quaglia	Paola
121395	Financial Markets and Economic Activity		SECS-P/01	6	Scelta	2	1			Gobbi	Lucio
145453	Data Mining		ING-INF/05	6	Car/Scelta	2	1			Velegrakis	Yannis
145289	Research Project		INF/01	12	Car/Scelta	2	1			DISI Faculty	
<p>Gli studenti non possono scegliere un corso già scelto in passato. Un corso non può essere scelto due volte neppure se la scelta è fatta in un'altra Università. Students cannot choose a course that has been already chosen in the past. A course cannot be chosen twice even if the choice is made at a different University.</p> <p>Gli studenti che non partecipano al programma di Doppia Laurea EIT Digital Master School e quindi fanno entrambi gli anni presso UNITN non possono fare più di 24 CFU complessivi nei settori SECS-P/07, SECS-P/11, SECS-S/03, SECS-P/01, SECS-S/06</p>											



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AD Code ESSE3	CORSO	COURSES	SSD ACADEMIC DISCIPLINE	CFU CREDITS	TAF TRAINING ACTIVITY	ANNO YEAR	SEMESTRE SEMESTER	CREDITI DA SCEGLIERE CREDITS TO CHOOSE	TE NOTES	Docente TITOLARE COGNOME PROFESSOR	Docente TITOLARE NOME
145098	Internship							6			
145302	Thesis							24			
							TOT	120			
Specialization area: Competitive Manufacturing (1st year)											
	<i>Innovation and Entrepreneurship</i>										
								24			
145936	Innovation and Entrepreneurship Basic		SECS-P/10	6	Affine	1	1			Angeli	Lorenzo
145288	Business Development Laboratory		SECS-P/08	9	Affine	1	2		*	Formentini	Marco
145455	ICT Innovation		ING-INF/05	9	Car.	1	2		**	Formentini	Marco
<p>(*) 145288 Business Development Laboratory - In via sperimentale nell'ambito del progetto per il miglioramento della qualità ed interdisciplinarietà dei corsi di Innovation & Entrepreneurship (I&E) di EIT Digital il corso sarà allineato per 8 CFU con il corso di Start-Up Lab presso il DEM e per 1 CFU mediante l'offerta I&E On-Line di EIT Digital. As part of the project for the improvement of the quality and interdisciplinary nature of the EIT Digital Innovation & Entrepreneurship (I&E) courses, the course will be aligned for 8 CFU with the Start-Up Lab course at the DEM and for 1 CFU through the I&E On-Line offer of EIT Digital.</p>											
<p>(**) 145455 ICT Innovation - Il corso include obbligatoriamente per gli studenti in doppia laurea EIT Digital il risultato della Summer School EIT Digital. Gli studenti non in doppia laurea EIT Digital e che non avessero partecipato alla Summer School compenseranno i crediti relativi con opportune attività in tema di I&E inclusa possibilmente la partecipazione alle attività I&E Improvement per il miglioramento della qualità. The course includes the EIT Digital Summer School result for students in double EIT Digital degrees. Students who are not in the double EIT Digital program and who have not attended the Summer School will compensate the relative credits with appropriate I&E activities including the possible participation in I&E Improvement activities for quality improvement.</p>											
								18			
<i>Mandatory</i>											
145062	Machine learning		INF/01	6	Car	1	1			Passerini	Andrea
145874	Robot Planning and its application		ING-INF/05	6	Car	1	1			Palopoli	Luigi
145453	Data Mining		ING-INF/05	6	Car	1	1			Velegakis	Yannis
145764	Deep learning		ING-INF/05	6	Car	1	2		*	Ricci	Elisa



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(*) 145764 Deep learning - It is required as a prerequisite: 145062 - Machine learning											
<i>Additional courses</i>								18			
146105	Design of digital production and assembly systems		ING-IND/17	6	Scelta	1	1			Pilati	Francesco
145810	Service Design and Engineering		ING-INF/05	6	Car.	1	1			Marchese	Maurizio
145811	Low-power wireless networking for the Internet of Things		ING-INF/05	6	Car	1	1			Picco	Gian Pietro
146217	Software Development for Collaborative Robotics		ING-INF/05	6	Car.	1	1			Palopoli	Luigi
145683	Data Visualization Lab		INF/01	6	Car.	1	2			Jurman	Giuseppe
146106	Precision engineering: digital manufacturing		ING-IND/16	6	Scelta	1	2			Bosetti	Paolo
145301	Project course		ING-INF/05	6	Car/Scelta	1	1			DISI Faculty	
Gli studenti che non partecipano al programma di Doppia Laurea EIT Manufacturing Master School e quindi fanno entrambi gli anni presso UNITN non possono fare più di 12 CFU complessivi nei settori ING-IND e ING-INF-07											
Specialization area: Competitive Manufacturing (2nd year: Exit Point EIT Manufacturing Master DS and AI for Competitive Manufacturing)											
<i>Mandatory</i>								12			
145881	AI and Innovation		ING-INF/05	6	Car.	2	1			Formentini	Marco
145623	Innovation and Entrepreneurship Studies in ICT		INF/01	6	Car.	2	1			Marchese	Maurizio
<i>Mandatory courses</i>								6			
145874	Robot Planning and its application		ING-INF/05	6	Car/Scelta	2	1			Palopoli	Luigi
155020	Multisensory Interactive Systems		ING-INF/05	6	Car/Scelta	2	1			Turchet	Luca
145810	Service Design and Engineering		ING-INF/05	6	Car.	2	1			Marchese	Maurizio
146042	Distributed robot perception		ING-INF/07	6	Scelta	2	1			Fontanelli	Daniele
146217	Software Development for Collaborative Robotics		ING-INF/05	6	Car.	2	1			Palopoli	Luigi



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<i>Additional courses</i>								12			
145062	Machine learning		INF/01	6	Car	2	1			Passerini	Andrea
145453	Data Mining		ING-INF/05	6	Car/Scelta	2	1			Velegrakis	Yannis
145972	High-Performance Computing for Data Science		ING-INF/05	6	Car.	2	1			Fiore	Sandro
145937	Introduction to Computer and Network Security		INF/01	6	Scelta	2	1			Ranise	Silvio
146114	Knowledge Graph Engineering		ING-INF/05	6	Car.	2	1			Giunchiglia	Fausto
145301	Project course		ING-INF/05	6	Car/Scelta	2	1			DISI Faculty	
<p>Gli studenti non possono scegliere un corso già scelto in passato. Un corso non può essere scelto due volte neppure se la scelta è fatta in un'altra Università. Students cannot choose a course that has been already chosen in the past. A course cannot be chosen twice even if the choice is made at a different University.</p> <p>Gli studenti che non partecipano al programma di Doppia Laurea EIT Manufacturing Master School e quindi fanno entrambi gli anni presso UNITN non possono fare più di 12 CFU complessivi nei settori ING-IND e ING-INF-07 University of Trento students attending both years in Trento and not participating in the Double Degree EIT Manufacturing Master School cannot select more than 12 Credits in ING-IND and ING-INF-07.</p>											
145098	Internship							6			
145302	Thesis							24			
							TOT	120			
Specialization area: Human Computer Interaction and Design (1st year)											
<i>Innovation and Entrepreneurship</i>								24			
145936	Innovation and Entrepreneurship Basic		SECS-P/10	6	Affine	1	1			Angeli	Lorenzo
145288	Business Development Laboratory		SECS-P/08	9	Affine	1	2		*	Formentini	Marco
145455	ICT Innovation		ING-INF/05	9	Car.	1	2		**	Formentini	Marco



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AD <i>Code ESSE3</i>	CORSO	COURSES	SSD <i>ACADEMIC DISCIPLINE</i>	CFU <i>CREDITS</i>	TAF <i>TRAINING ACTIVITY</i>	ANNO <i>YEAR</i>	SEMESTRE <i>SEMESTER</i>	CREDITI DA SCEGLIERE <i>CREDITS TO CHOOSE</i>	TE <i>NOTES</i>	Docente TITOLARE COGNOME <i>PROFESSOR</i>	Docente TITOLARE NOME
<p>(*) 145288 Business Development Laboratory - In via sperimentale nell'ambito del progetto per il miglioramento della qualità ed interdisciplinarietà dei corsi di Innovation & Entrepreneurship (I&E) di EIT Digital il corso sarà allineato per 8 CFU con il corso di Start-Up Lab presso il DEM e per 1 CFU mediante l'offerta I&E On-Line di EIT Digital. As part of the project for the improvement of the quality and interdisciplinary nature of the EIT Digital Innovation & Entrepreneurship (I&E) courses, the course will be aligned for 8 CFU with the Start-Up Lab course at the DEM and for 1 CFU through the I&E On-Line offer of EIT Digital.</p>											
<p>(**) 145455 ICT Innovation - Il corso include obbligatoriamente per gli studenti in doppia laurea EIT Digital il risultato della Summer School EIT Digital. Gli studenti non in doppia laurea EIT Digital e che non avessero partecipato alla Summer School compenseranno i crediti relativi con opportune attività in tema di I&E inclusa possibilmente la partecipazione alle attività I&E Improvement per il miglioramento della qualità. The course includes the EIT Digital Summer School result for students in double EIT Digital degrees. Students who are not in the double EIT Digital program and who have not attended the Summer School will compensate the relative credits with appropriate I&E activities including the possible participation in I&E Improvement activities for quality improvement.</p>											
<i>Mandatory courses</i>								24			
145453	Data Mining	ING-INF/05	6	Car.	1	1				Velegrakis	Yannis
145896	Statistical Methods	INF/01	6	Car	1	1				Coghi	Michele
145683	Data Visualization Lab	INF/01	6	Car.	1	2				Jurman	Giuseppe
146122	Ethics for Computer Science and Engineering	ING-INF/05	6	Car.	1	2				Brusseau	James
145866	Introduction to Robotics	ING-INF/04	6	Scelta	1	2				Saveriano	Matteo
146066	Human-Computer Interaction	ING-INF/05	6	Car.	1	2				Turchet	Luca
145864	Human Machine Dialogue	ING-INF/05	6	Car.	1	1				Riccardi	Giuseppe
145820	Laboratory of Computer Science Education	INF/01	6	Car.	1	2			*	Montresor	Alberto
<p>(*) 145820 Laboratory of Computer Science Education: il corso tace nell'aa.a. 2023-24 /The course is not active in a.y. 2023-24</p>											
<i>Additional courses</i>								12			
145859	Natural Language Understanding	ING-INF/05	6	Car.	1	2				Riccardi	Giuseppe
146170	Applied Natural Language Processing	ING-INF/05	6	Car.	1	2				Staiano	Jacopo
146217	Software Development for Collaborative Robotics	ING-INF/05	6	Car.	1	1				Palopoli	Luigi
145062	Machine learning	INF/01	6	Car	1	1				Passerini	Andrea
145289	Research Project	INF/01	12	Scelta	1	1-2				DISI Faculty	



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Specialization area: Human Computer Interaction and Design (2nd year: Exit Point EIT)											
<i>Mandatory</i>											
145623	Innovation and Entrepreneurship Studies in ICT		INF/01	6	Car.	2	1	6		Marchese	Maurizio
<i>Additional courses</i>											
155019	Prototyping interactive systems		INF/01	6	Car/Scelta	2	1	24		Zancanaro	Massimo
145520	Affective computing		ING-INF/05	6	Car/Scelta.	2	1			Sebe	Niculae
146155	Advanced HCI		ING-INF/05	6	Car.	2	1			Varni	Giovanna
155003	Social interaction		M-PSI/05	6	Scelta	2	1			Vaes	Jeroen Andre Filip
145459	Participatory Design		ING-INF/05	6	Car/Scelta	2	1			D' Andrea	Vincenzo
155020	Multisensory Interactive Systems		ING-INF/05	6	Car/Scelta	2	1			Turchet	Luca
145301	Project course		ING-INF/05	6	Car/Scelta	2	1			DISI Faculty	
145098	Internship							6			
145302	Thesis							24			
							TOT	60			

Safety courses

The on-line courses “Health and Safety in the workplace General Risk training” (4 hours) and “Health and Safety in the workplace Specific risk training (Low Risk)” (4 hours) are mandatory for all the students attending courses held in computer and/or teaching labs. The courses are available through Didattica online.

Some of the courses may have additional requirements in terms of knowledge on the safety regulations. Such requirements are explicitly mentioned in the Syllabus of the courses and can be covered through specific safety courses (medium risk) offered by the University.