

	course	SSD	Type of activity	language	hrs	credits	year of attendance	final test	optional/mandatory	curriculum
Architecture for Big Data Processing	ARCHITETTURA PER L'ELABORAZIONE DEI BIG DATA I /ARCHITECTURE FOR BIG DATA PROCESSING I	INF/01	laboratory	English	12	1	1 st	yes	mandatory	Big Data & Analytics for Business
	ARCHITETTURA PER L'ELABORAZIONE DEI BIG DATA II /ARCHITECTURE FOR BIG DATA PROCESSING II	INF/01	laboratory	English	12	1	1 st	yes	mandatory	Big Data & Analytics for Business
Bayesian Statistics	PRINCIPI DI STATISTICA BAYESIANA - PRINCIPLES OF BAYESIAN STATISTICS	SECS-S/01	lesson	English	16	2	1 st	yes	mandatory	Statistics
	MODELLI MISTURA IN STATISTICA BAYESIANA - MIXTURE MODELS IN BAYESIAN STATISTICS	SECS-S/01	laboratory	English	12	1	1 st	yes	mandatory	Statistics
	STATISTICA BAYESIANA COMPUTAZIONALE - BAYESIAN COMPUTATIONS	SECS-S/01	lesson	English	16	2	1 st	yes	mandatory	Statistics
Big Data and Artificial Intelligence	NATURAL LANGUAGE UNDERSTANDING	INF/01	laboratory	English	12	1	1 st	yes	mandatory	Big Data & Analytics for Business
	EXPLAINABLE AI FOR BUSINESS VALUE	INF/01	laboratory	English	12	1	1 st	yes	mandatory	Big Data & Analytics for Business
	DEEP LEARNING AND COMPUTER VISION FOR BUSINESS	INF/01	laboratory	English	12	1	1 st	yes	mandatory	Big Data & Analytics for Business
Big Data Management	GESTIONE DEI BIG DATA / BIG DATA MANAGEMENT	ING-INF/05	laboratory	English	12	1	1 st	yes	mandatory	Statistics
Computational Statistics	STATISTICA COMPUTAZIONALE I / COMPUTATIONAL STATISTICS I	SECS-S/01	lesson	English	16	2	1 st	yes	mandatory	Economics
	STATISTICA COMPUTAZIONALE II / COMPUTATIONAL STATISTICS II	SECS-P/01	laboratory	English	12	1	1 st	yes	mandatory	Economics (optional for Statistics)
Econometrics	ECONOMETRIA I - IL MODELLO DI REGRESSIONE LINEARE / ECONOMETRICS I - THE LINEAR REGRESSION MODEL	SECS-P/05	lesson	English	16	2	1 st	yes	mandatory	Economics
	ECONOMETRIA I - IL MODELLO DI REGRESSIONE LINEARE (ESERCITAZIONI) / ECONOMETRICS I - THE LINEAR REGRESSION MODEL (TUTORIALS)	SECS-P/05	lesson	English	8	1	1 st	yes	mandatory	Economics
	ECONOMETRIA II - MICROECONOMETRIA / ECONOMETRICS II - MICROECONOMETRICS	SECS-P/05	lesson	English	16	2	1 st	yes	mandatory	Economics
	ECONOMETRIA II - MICROECONOMETRIA (ESERCITAZIONI) / ECONOMETRICS II - MICROECONOMETRICS (TUTORIALS)	SECS-P/05	lesson	English	8	1	1 st	yes	mandatory	Economics
	ECONOMETRIA III - SERIE STORICHE / ECONOMETRICS III - TIME SERIES	SECS-P/05	lesson	English	16	2	1 st	yes	mandatory	Economics
	ECONOMETRIA III - SERIE STORICHE (ESERCITAZIONI) / ECONOMETRICS III - TIME SERIES (TUTORIALS)	SECS-P/05	lesson	English	8	1	1 st	yes	mandatory	Economics
Finance	FINANZA I - FINANZA EMPIRICA / FINANCE I - EMPIRICAL CORPORATE FINANCE	SECS-P/11	lesson	English	16	2	1 st	yes	optional	Economics
	FINANZA II - TEORIA DEI PREZZI DELLE ATTIVITÀ FINANZIARIE / FINANCE II - ASSET PRICING THEORY	SECS-S/06	lesson	English	16	2	1 st	yes	optional	Economics
	FINANZA III - TEORIA DELLE BANCHE / FINANCE III - THEORETICAL BANKING	SECS-P/11	lesson	English	16	2	1 st	yes	optional	Economics
Machine Learning	MACHINE LEARNING	INF/01	laboratory	English	12	1	1 st	yes	mandatory	Big Data & Analytics for Business
Macroeconomics	MACROECONOMIA I / MACROECONOMICS I	SECS-P/01	lesson	English	16	2	1 st	yes	mandatory	Economics
	MACROECONOMIA II / MACROECONOMICS II	SECS-P/01	laboratory	English	12	1	1 st	yes	mandatory	Economics
	MACROECONOMIA III / MACROECONOMICS III	SECS-P/01	lesson	English	16	2	1 st	yes	mandatory	Economics
	MACROECONOMIA IV (ESERCITAZIONI) / MACROECONOMICS IV (TUTORIALS)	SECS-P/01	laboratory	English	12	1	1 st	yes	mandatory	Economics
Mathematical Analysis	ANALISI MATEMATICA I / MATHEMATICAL ANALYSIS I	MAT/01	lesson	English	16	2	1 st	yes	mandatory	Statistics
	ANALISI MATEMATICA II / MATHEMATICAL ANALYSIS II	MAT/01	lesson	English	16	2	1 st	yes	mandatory	Statistics

	ANALISI MATEMATICA III / MATHEMATICAL ANALYSIS III	MAT/01	lesson	English	16	2	1 st	yes	mandatory	Statistics
Mathematics	MATEMATICA - ALGEBRA LINEARE / MATHEMATICS - LINEAR ALGEBRA	SECS-S/06	lesson	English	8	1	1 st	yes	mandatory	Economics
	MATEMATICA I / MATHEMATICS I	SECS-S/06	lesson	English	16	2	1 st	yes	mandatory	Economics
	MATEMATICA II / MATHEMATICS II	SECS-S/06	lesson	English	16	2	1 st	yes	mandatory	Economics
	MATEMATICA III / MATHEMATICS III	SECS-S/06	lesson	English	16	2	1 st	yes	mandatory	Economics
Microeconomics	MICROECONOMIA I - CONSUMO E PRODUZIONE, INCERTEZZA, EQUILIBRIO ECONOMICO GENERALE / MICROECONOMICS I - CONSUMPTION AND PRODUCTION, UNCERTAINTY, GENERAL ECONOMIC EQUILIBRIUM	SECS-P/01	laboratory	English	12	1	1 st	yes	mandatory	Economics
	MICROECONOMIA I - CONSUMO E PRODUZIONE, INCERTEZZA, EQUILIBRIO ECONOMICO GENERALE (ESERCITAZIONI) / MICROECONOMICS I - CONSUMPTION AND PRODUCTION, UNCERTAINTY, GENERAL ECONOMIC EQUILIBRIUM (TUTORIALS)	SECS-P/01	lesson	English	8	1	1 st	yes	mandatory	Economics
	MICROECONOMIA II - TEORIA DEI GIOCHI / MICROECONOMICS II - GAME THEORY	SECS-P/01	lesson	English	16	2	1 st	yes	mandatory	Economics
	MICROECONOMIA II - TEORIA DEI GIOCHI (ESERCITAZIONI) / MICROECONOMICS II - GAME THEORY (TUTORIALS)	SECS-P/01	lesson	English	8	1	1 st	yes	mandatory	Economics
	MICROECONOMIA III - TEORIA DEI CONTRATTI / MICROECONOMICS III - CONTRACT THEORY	SECS-P/01	lesson	English	16	2	1 st	yes	mandatory	Economics
	MICROECONOMIA III - TEORIA DEI CONTRATTI (ESERCITAZIONI) / MICROECONOMICS III - CONTRACT THEORY (TUTORIALS)	SECS-P/01	lesson	English	8	1	1 st	yes	mandatory	Economics
	MICROECONOMIA IV - POTERE DI MERCATO: PREZZI / MICROECONOMICS IV - MARKET POWER: PRICING	SECS-P/01	lesson	English	16	2	1 st	yes	mandatory	Economics
	MICROECONOMIA IV - POTERE DI MERCATO: PREZZI (ESERCITAZIONI) / MICROECONOMICS IV - MARKET POWER: PRICING (TUTORIALS)	SECS-P/01	lesson	English	8	1	1 st	yes	mandatory	Economics
Numerical Optimization	OTTIMIZZAZIONE NUMERICA / NUMERICAL OPTIMIZATION	MAT/01	laboratory	English	12	1	1 st	yes	mandatory	Statistics
Probability	PROBABILITÀ I / PROBABILITY I	SECS-S/01	lesson	English	16	2	1 st	yes	mandatory	Statistics
	PROBABILITÀ II / PROBABILITY II	SECS-S/01	lesson	English	16	2	1 st	yes	mandatory	Statistics
Probability and Statistical Inference	PROBABILITY / PROBABILITÀ	SECS-S/01	lesson	English	16	2	1 st	yes	mandatory	Big Data & Analytics for Business
	INFERENZA STATISTICA I - CLASSICA / STATISTICAL INFERENCE I - CLASSIC	SECS-S/01	lesson	English	16	2	1 st	yes	mandatory	Big Data & Analytics for Business
	INFERENZA STATISTICA II - BAYESIANA / STATISTICAL INFERENCE II - BAYESIAN	SECS-S/01	lesson	English	16	2	1 st	yes	mandatory	Big Data & Analytics for Business
Programming in Python	PROGRAMMAZIONE IN PYTHON / PROGRAMMING IN PYTHON	INF/01	lesson	English	16	2	1 st	yes	mandatory	Big Data & Analytics for Business
R for Data Science	R PER LA DATA SCIENCE / R FOR DATA SCIENCE	SECS-S/01	laboratory	English	12	1	1 st	yes	mandatory	Statistics
Research Methods	METODI PER LA RICERCA / RESEARCH METHODS	SECS-P/01	lesson	English	16	2	1 st	yes	mandatory	Economics
	METODI PER LA RICERCA (ESERCITAZIONI) / RESEARCH METHODS (TUTORIALS)	SECS-P/01	lesson	English	16	2	1 st	yes	mandatory	Economics
Social Media Analytics	SOCIAL MEDIA ANALYTICS	INF/01	laboratory	English	12	1	1 st	yes	mandatory	Big Data & Analytics for Business
Statistical Inference	INFERENZA STATISTICA I / STATISTICAL INFERENCE I	SECS-S/01	lesson	English	16	2	1 st	yes	mandatory	Statistics
	INFERENZA STATISTICA II - STATISTICAL INFERENCE II	SECS-S/01	lesson	English	16	2	1 st	yes	mandatory	Statistics
Statistical Learning	STATISTICAL LEARNING I	SECS-S/01	lesson	English	8	1	1 st	yes	mandatory	Statistics
	STATISTICAL LEARNING II	SECS-S/01	lesson	English	8	1	1 st	yes	mandatory	Statistics

	STATISTICAL LEARNING III	SECS-S/01	lesson	English	8	1	1 st	yes	mandatory	Statistics
Statistical Modelling	MODELLI STATISTICI I / STATISTICAL MODELLING I	SECS-S/01	laboratory	English	12	1	1 st	yes	mandatory	Statistics (mandatory for Big Data & Analytics for
	MODELLI STATISTICI II / STATISTICAL MODELLING II	SECS-S/01	laboratory	English	12	1	1 st	yes	mandatory	Statistics
	MODELLI STATISTICI III / STATISTICAL MODELLING III	SECS-S/01	laboratory	English	12	1	1 st	yes	mandatory	Statistics
	MODELLI STATISTICI IV / STATISTICAL MODELLING IV	SECS-S/01	laboratory	English	12	1	1 st	yes	mandatory	Statistics
Stochastic Processes	PROCESSI STOCASTICI / STOCHASTIC PROCESSES	SECS-S/01	lesson	English	16	2	1 st	yes	mandatory	Statistics
Technology and Innovation	GESTIONE DELLA TECNOLOGIA E DELL'INNOVAZIONE I / TECHNOLOGY AND INNOVATION MANAGEMENT I	SECS-P/08	lesson	English	8	1	1 st	yes	mandatory	Big Data & Analytics for Business
	GESTIONE DELLA TECNOLOGIA E DELL'INNOVAZIONE II / TECHNOLOGY AND INNOVATION MANAGEMENT II	SECS-P/08	lesson	English	8	1	1 st	yes	mandatory	Big Data & Analytics for Business
	GESTIONE DELLA TECNOLOGIA E DELL'INNOVAZIONE III / TECHNOLOGY AND INNOVATION MANAGEMENT III	SECS-P/08	lesson	English	8	1	1 st	yes	mandatory	Big Data & Analytics for Business
	GESTIONE DELLA TECNOLOGIA E DELL'INNOVAZIONE IV / TECHNOLOGY AND INNOVATION MANAGEMENT IV	SECS-P/08	lesson	English	8	1	1 st	yes	mandatory	Big Data & Analytics for Business
Topics in Advanced Data Science	READING GROUP SU BASI DI DATI PER DATI STRUTTURATI E NON STRUTTURATI - SQL / READING GROUP ON DATABASES FOR STRUCTURED ANFD UNSTRUCTURED DATA - SQL	INF/01	laboratory	English	12	1	2 nd	yes	mandatory	Big Data & Analytics for Business
	READING GROUP SU ELABORAZIONE DEL LINGUAGGIO NATURALE / READING GROUP ON NATURAL LANGUAGE PROCESSING	INF/01	laboratory	English	12	1	2 nd	yes	mandatory	Big Data & Analytics for Business
	READING GROUP SU INTELLIGENZA ARTIFICIALE GENERATIVA / READING GROUP ON GENERATIVE AI	INF/01	laboratory	English	12	1	2 nd	yes	mandatory	Big Data & Analytics for Business
Topics in Advanced Macroeconomics	READING GROUP SU FRIZIONI FINANZIARIE / READING GROUP ON FINANCIAL FRICTIONS	SECS-P/01	laboratory	English	12	1	2 nd	yes	optional	Economics
	READING GROUP SU TEORIA DEI NETWORK SOCIALI / READING GROUP ON SOCIAL NETWORK THEORY	SECS-P/01	laboratory	English	12	1	2 nd	yes	optional	Economics
	READING GROUP SU MODELLI VAR STRUTTURALI / READING GROUP ON STRUCTURAL VAR MODELS	SECS-P/05	laboratory	English	12	1	2 nd	yes	optional	Economics
	READING GROUP SU TEMI DI ECONOMIA INTERNAZIONALE E CRESCITA / READING GROUP ON TOPICS IN INTERNATIONAL ECONOMICS AND GROWTH	SECS-P/01	laboratory	English	12	1	2 nd	yes	optional	Economics
	READING GROUP SU ECONOMETRIA DELLA FINANZA / READING GROUP ON FINANCIAL ECONOMETRICS	SECS-P/05	laboratory	English	12	1	2 nd	yes	optional	Economics
Topics in Advanced Microeconomics	READING GROUP SU APPLICAZIONI DI TEORIA DEI GIOCHI / READING GROUP ON APPLICATIONS OF GAME THEORY	SECS-P/01	laboratory	English	12	1	2 nd	yes	optional	Economics
	READING GROUP SU ECONOMIA E POLITICA SANITARIA APPLICATE / READING GROUP ON READING GROUP ON APPLIED HEALTH ECONOMICS AND POLICY	SECS-P/01	laboratory	English	12	1	2 nd	yes	optional	Economics
	READING GROUP SU UTILITÀ ATTESA E TEORIA DELLE DECISIONI / READING GROUP ON EXPECTED UTILITY AND DECISION THEORY	SECS-P/01	laboratory	English	12	1	2 nd	yes	optional	Economics
	READING GROUP SU AUTORITÀ E DELEGA / READING GROUP ON AUTHORITY AND DELEGATION	SECS-P/01	laboratory	English	12	1	2 nd	yes	optional	Economics
	READING GROUP SU ECONOMIA SPERIMENTALE / READING GROUP ON EXPERIMENTAL ECONOMICS	SECS-P/01	laboratory	English	12	1	2 nd	yes	optional	Economics
	READING GROUP SU TEMI DI POLITICA ECONOMICA E DELLE ISTITUZIONI / READING GROUP ON TOPICS IN POLITICAL ECONOMICS AND POLITICAL INSTITUTIONS	SECS-P/01	laboratory	English	12	1	2 nd	yes	optional	Economics
	READING GROUP SU ORGANIZZAZIONE INDUSTRIALE DEI MERCATI A DUE PARTI / READING GROUP ON INDUSTRIAL ORGANIZATION OF TWO-SIDED MARKETS	SECS-P/01	laboratory	English	12	1	2 nd	yes	optional	Economics
Topics in Advanced Statistics	READING GROUP SU ALCUNI ASPETTI DI MODELLIZZAZIONE STATISTICA / READING GROUP ON SOME ISSUES IN STATISTICAL MODELLING	SECS-S/01	lesson	English	16	2	2 nd	yes	optional	Statistics
	READING GROUP ON AUTOMATED MACHINE LEARNING & NEURAL ARCHITECTURAL SEARCH	INF/01	laboratorio	English	12	1	2 nd	yes	optional	Statistics
	DEEP LEARNING	INF/01	laboratorio	English	12	1	2 nd	yes	optional	Statistics

	READING GROUP SU METODI COMPUTAZIONALI BAYESIANI APPROSSIMATI / READING GROUP ON APPROXIMATE BAYESIAN COMPUTATIONAL METHODS	SECS-S/01	laboratorio	English	12	1	2 nd	yes	optional	Statistics
	READING GROUP SU DATI SPAZIO-TEMPORALI / READING GROUP ON SPATIO-TEMPORAL DATA	SECS-S/01	lesson	English	8	1	2 nd	yes	optional	Statistics
Topics in Empirical Finance	READING GROUP ON EMPIRICAL BANKING	SECS-P/11	laboratorio	English	12	1	2 nd	yes	optional	Economics
	READING GROUP SU PREZZI DELLE ATTIVITÀ FINANZIARIE E GESTIONE DEL PORTAFOGLIO AVANZATI / READING GROUP ON ADVANCED ASSET PRICING AND PORTFOLIO MANAGEMENT	SECS-P/01	laboratorio	English	12	1	2 nd	yes	optional	Economics
	READING GROUP SU FINANZA D'IMPRESA AVANZATA / READING GROUP SU ADVANCED CORPORATE FINANCE	SECS-P/11	laboratorio	English	12	1	2 nd	yes	optional	Economics
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