UNIVERSITA' DEGLI STUDI DI MILANO
MANIFESTO DEGLI STUDI A.A. 2020/21
LAUREA MAGISTRALE IN
DATA SCIENCE AND ECONOMICS (DSE) Classe LM-91
Enrolled from 2018/2019 academic year

GENERALITA'

Classe di laurea di appartenenza:	LM-91 TECNICHE E METODI PER LA SOCIETA DELL'INFORMAZIONE
Titolo rilasciato:	Dottore Magistrale
Durata del corso di studi:	2 anni
Crediti richiesti per l'accesso:	180
Cfu da acquisire totali:	120
Annualità attivate:	1° , 2°
Modalità accesso:	Libero con valutazione dei requisiti di accesso
Codice corso di studi:	B74

RIFERIMENTI

Presidente Collegio Didattico
Prof.ssa Silvia Salini

Docenti tutor
Prof. Alfio Ferrara (Academic guidance tutor)
Prof. Nicolò Cesa-Bianchi (Academic guidance tutor)
Prof. Fabrizio Iacone (Erasmus and international mobility tutor)
Prof. Giancarlo Manzi (Internship tutor)
Porf.ssa Sabrina Gaito (Internship tutor)

Sito web del corso di laurea
https://dse.cdl.unimi.it

Degree Course E-mail
Email: dse@unimi.it

Facebook
http://www.facebook.com/dseunimi

Twitter
https://twitter.com/DseUnimi

CARATTERISTICHE DEL CORSO DI STUDI

Premessa
In the era of Industry 4.0, IoT (Internet of Things), Open and Big Data Social Media, the adoption of intelligent processes based on the analysis of large amounts of data is not just an important technological innovation, as others occurred in the past, but a real social and economic singularity that has radically changed the way in which human beings, businesses and institutions live and work. Through the data collected, economic operators are able to provide services adapted to individual preferences, understand the complex dynamics of constantly evolving contexts, predict social, cultural and market trends, generate new value. Since the year 2000, data produced by the major operators in the social media world have been used for predictive purposes or for the personalization of services. In recent years, due to the constant increase in the number of sensor and computating components integrated into production systems and the growing availability of data sources accessible to international organizations, awareness of the strategic importance of a scientific approach to the analysis of data has matured not only with large economic entities, but also in the world of small and medium-sized businesses. Increasingly, in the coming years the ability to analyze the functioning of the ecosystem of production and distribution of goods and services, business cycles, and even economic and social attitudes, will have a potentially disruptive effect on the competitiveness of the business system. Without a vigorous research and innovation effort, Italian industry will have to limit itself to a role of user of solutions developed elsewhere, without having control over usability, costs and analysis interfaces.
It therefore becomes crucial for the industry, especially of our country, to acquire new skills that are not due to the mere mix of computer science, statistical and economic competences, but which instead require the ability to think in new ways to the social and economic challenges in terms of highly dynamic, evolutionary and complex models and processes. The analysis of data is no longer just a tool with which to operate in the economic context, but becomes a guiding criterion in strategic

choices and in the evaluation of the effectiveness of its action, in order to enhance its data assets, to create new models of business, and to optimize the management of resources. This new professional figure is named data scientist.

The Master of Science in "Data Science and Economics" (DSE) aims to respond to the training needs of data scientist in the economic field by providing the skills necessary to analyze and understand the nature of data through modern data management techniques, machine learning, data mining and cloud computing, in order to extract meaningful relationships and recurring patterns, build predictive and nowcasting models that integrate company, market, administrative and social media data, perform analysis of policy effects (economic, social) or actions (investments, marketing campaigns) and any other activity related to the sectors of economy, marketing, business and finance.

The degree program aims to provide a solid and modern cultural background on computer science, statistics and economics, providing an integrated view of these skills in all its courses, in the belief that the integration of the foundational disciplines can develop for students a strong added value compared to the mere sum of skills acquired separately. The innovation in the teaching methods also has the ambition to develop, in students, the specific methodological attitude of the data scientist, forming professional figures capable of thinking in a new way the reality, starting from the challenges, thinking in terms of models, understanding the value of data, and learning how to evaluate the real impact of choices.

To this end, the modality of frontal transmission of skills will be integrated with laboratory activities that develop the ability to work in groups starting from real problems and using real data. Methods of work such as hackathons, problem solving, challenges among working groups, which already constitute personnel selection tools at the most important companies operating in the data sector, will be used intensively in the degree course with the training objective to develop the methodological attitude expected for the data scientist. The case studies and laboratory simulations will replace, as often as possible, the use of real data, without renouncing the complexity; these case studies will involve companies, research centers, institutions, economic and financial operators, communication agencies and marketing in the design of activities and interaction with students.

Obiettivi formativi generali e specifici

Graduates of this MSc program will receive advanced training on methodologies and IT tools, quantitative and methodological notions, to interpret and analyze economic phenomena using approaches that integrate business, market and social media data. Among these, the analysis of the effects of policies (economic, social) or the evaluation of actions (investments, marketing campaigns) and any other activity related to the sectors of economy, marketing, business and finance or social sciences.

The course of study provides for the construction of solid methodological bases through the development of topics of economic theory, decision theory under uncertainty conditions, micro-econometric techniques and analysis of time series. It also provides for the study of new data management technologies and scalability of analysis systems in cloud environments, as well as machine learning techniques for the extraction and classification of information.

After these compulsory basic training activities, the course of study specializes through the possibility of choosing courses for a total of 18 credits among different study paths suggested to students in the context of their autonomy and natural inclination. A first specialization course offers useful tools for economic applications in the area of policy or investment assessment, the study of production processes and the evolution of social phenomena, as well as the basis for new approaches to the analysis of financial markets and risk. A further focus is instead on the aspects of technological innovation and their impact on the data-driven business, including new markets and the fintech sector. A third address instead lays the foundations for the study of social phenomena through innovative technologies and techniques of social media analysis and textual analysis.

These specialization activities are geared, together with the external training activity, to the preparation of the thesis dissertation and to the final exam. Therefore, the thesis is considered as the fulfillment of a course of study and apprenticeship that originates in the choice of courses of address.

The courses of the degree course, both compulsory and those chosen, include lectures and laboratory classes as well as autonomous project activities and individual activities in the laboratory for not less than 10 total credits, in order to guarantee students an adequate preparation also from a practical point of view, in close contact with real data and specific case studies.

The in-depth studies in mathematics, statistics, information technology and economics, highly qualify the Data Science and Economics training project and prepares the students also for selective procedures of PhD and research programs in the areas of Data Science, Computer Science, Business Intelligence and Economics.

Risultati di apprendimento attesi

In accordance with the principles of European harmonization, outgoing knowledge and skills in terms of expected learning outcomes, acquired or developed by graduates in the degree course in Data Science and Economics, are described below according to the system of Dublin Descriptors:

A. Knowledge and understanding

Graduates will have advanced theoretical knowledge and skills in the areas of economics, mathematics, statistics and information technology.

For the economic area, the required compulsory courses cover: Microeconomics and Macroeconomics, Micro-Econometrics, Causal Inference and Time Series Analysis. Suggested courses include: Economics of Government and Policy Evaluation, Labor Economics and Policy Evaluation, Patients' Needs and Healthcare Markets, Industrial Firms and Policies, Experimental Methods and Behavioral Economics, Global Firms and Market, Game Theory.

For the mathematical-statistical area, the courses include: Graph Theory, Discrete Mathematics, Optimization, Machine Learning, Statistical Learning, Deep Learning and Artificial Intelligence, Clustering and Probabilistic Modeling, and among those suggested: Dimensionality Reduction and Sparse Systems, Text Mining and Sentiment Analysis, Social Network Analysis, Numerical Methods for Finance, Statistical Methods for Finance.

For the computer science area, the expected courses focus on: Coding for Data Science, Data Management, Machine Learning, Deep Learning, Artificial Intelligence, Cybersecurity and Privacy Preservation Techniques, Cloud and Distributed Computing, Algorithms for Massive Data, Clustering and Probabilistic Modeling, Text Mining and Sentiment Analysis, Social Network Analysis.

The exercises, which integrate all the teachings of the first year of the course, will have an important role in achieving these results. Students are also expected to extend and deepen the knowledge thus acquired through participation in seminars conducted by external experts, with consultation of bibliographic materials and thesis work. Individual learning is assessed mainly through the exam and, for some quantitative teachings, based on tests conducted in computer rooms. The thesis provides an additional opportunity to verify the understanding of the topics covered in the degree course.

B. Applying knowledge and understanding
Graduates will be able to apply the knowledge and skills acquired to the analysis of economic and social phenomena and to the management of business problems posed by the technological innovation process; to evaluate the effects of economic policies or investments; the quantitative assessment of the risk and the effects of decisions under conditions of uncertainty; to the study of complex and interconnected systems.

Economic area: as far as the teaching of the economic field is concerned, the skills are learned through the discussion of the main issues and problems of real economy and the evaluation of the policies for their solution.
Mathematical-statistical area: the ability to apply quantitative methods of analysis and to analytically set business decisions are learned both through the exercises of the relevant lessons and, above all, through the use of diversified data sources in the context of problems real.
Computer science area: the ability to apply knowledge and understanding is developed by the teaching of computer science with reference to data management and analysis systems; to cloud computing systems and algorithms for large amounts of data.

Individual learning is constantly verified in the exercises and evaluated mainly with written problem-solving exams.
The ability to apply the knowledge acquired in the degree course is expressed in the degree thesis that also offers an opportunity for verification.
The knowledge and skills are achieved and verified in the training activities foreseen by the Manifesto of Studies in the Economics, Mathematics-Statistics and Computer Science areas.

C. Making judgements
Graduates should acquire the ability to formulate independent and informed judgments by developing critical skills: the effects and effectiveness of the decisions of the companies and institutions in which they operate, also with reference to the ethical implications of such actions and decisions, above all in relation to the security and confidentiality of the analyzed data; the consequences and effectiveness of economic policies. They will also have to fully assimilate the principles of professional deontology that guide interpersonal relations in the occupational context of reference and will also have to acquire the fundamental principles of the scientific approach to the solution of the economic-business problems that they will face in their professional activity. The multidisciplinary approach of the degree program favors the development of autonomous judgment and critical reasoning, offering students the opportunity to compare methodological approaches belonging to different disciplines. The significant presence of both economic and quantitative and computer science courses, which provide methodological and technical skills of formal analysis, favors the learning of the scientific approach to problem solving. The acquisition of critical skills and autonomy of judgment will be verified in the company teachings through the presentation and discussion of business cases. These skills will also be verified through the provision of open questions in the examinations and, in some cases, through the evaluation of short essays and written papers.

D. Communication skills
Graduates will be able to: present and communicate effectively the results of their work within the company or institutions (projects, reporting, document analysis, etc.); argue their positions and communicate clearly and effectively in a written and oral form supported by evidence of data; set up cooperative and collaborative relationships within working groups; present proposals and solutions to the problems of reference working contexts using mathematical-quantitative tools; access a more

specialized audience, for example, by publishing the results of the research. The ability to communicate effectively in working contexts is primarily acquired through the presentation and discussion of business cases. The application of quantitative methods of analysis and computer techniques in economic teaching develops the ability of students to use information and empirical evidence to support the solutions they propose in working contexts. The drafting of reports and short essays, foreseen by some teachings, and the drafting of the degree thesis allow to enhance the written communication skills. The participation to the exercise classes, the development of any internships in the company and, alternatively, participation to internal laboratories will allow students to develop communication skills and skills of relational type. The ability to communicate is verified in the examination tests as an element that contributes to the overall judgment and specifically in the case of courses that provide for the acquisition of the training objectives. The drafting and discussion of the degree thesis provide further evaluation elements.

E. Learning skills

Graduates will have the ability to develop and deepen their skills through: the consultation of specialized scientific publications; the consultation of databases and other information on the web; the analysis of information and data through mathematical, statistical and econometric tools. The degree course in Data Science and Economics also provides the methodological skills that foster the ability to further learning, both to independently undertake a professional path aimed at the exercise of managerial functions or high responsibility in industry and in the sector. financial where more and more the figure of the data scientist is affirmed, both to develop the autonomy of research functional to undertake professional activities in research institutions and study offices or to continue their studies in second level master's degrees or in doctoral programs.

Students also have the opportunity to attend, as chosen educational activities, specific laboratories for learning methods of economic research. Furthermore, the capacity for further learning is fostered by the presence of teachings that provide methodological and technical skills of formal analysis. Finally, the preparation of the degree thesis provides students with an additional opportunity to develop learning skills through the independent elaboration of advanced research work.

Profilo professionale e sbocchi occupazionali

The MSc program in Data Science and Economics aims to train the following professional figures.

Profile: Data Scientist.
Functions: Its main functions are to analyze and elaborate forecasts on large data flows, identifying and applying the most appropriate software tools and statistical techniques for their elaboration; create sophisticated models for predictive data-driven analysis. Data Scientist knows the different contexts in which data emerge and can interact with experts from various disciplines.
Skills: Statistical analysis. Programming. Knowledge of software tools.
Outlets: small and medium-sized enterprises, startups and public administration.

Profile: Data Driven Economist.
Functions: its main functions are to frame problems of economic analysis in the context of data science by identifying data and technologies that can provide new keys for reading or evaluating economic and social phenomena.
Skills: Economic theory, statistical and computer techniques.
Outlets: large companies, public administration and international organizations.

Profile: Data-Driven Decision Maker.
Functions: the professions included in this category exercise managerial functions of high responsibility in private and public companies with an international vocation with a strong technological component within it, using data analysis to guide strategic and operational decisions.
Skills: baggage of theoretical knowledge of an economic-quantitative-IT nature to support organizational decisions and the development of economic institutions and companies.
Outlets: small and medium-sized enterprises, large companies, public administration.

Profile: Analyst of development projects or economic policies
Functions: the professions included in this category contribute to the formulation, monitoring and analysis of development projects or economic policies.
Skills: the baggage of theoretical and operational notions in the economy, in the business management strategy, and in the economic policies that govern them.
Outlets: They operate in private or public companies in industry, commerce, business services, personal and similar services and in international and / or governmental institutions.

Profile: Marketing Analytics Manager.
Functions: the professions included in this category exercise functions of identification and supervision of decision-making processes of an operative nature in direct coordination with the company's executive management.
Skills: baggage of theoretical knowledge of an economic-quantitative-IT nature to support organizational decisions and the development of economic institutions and companies.
Outlets: large companies.

Conoscenze per l'accesso

They can access the second cycle degree course in Data Science and Economics, graduates with a degree awarded in Italy (ex d. 270/04) of the following classes:

l-7 Ingegneria civile e ambientale
l-8 Ingegneria dell'informazione
l-9 Ingegneria industriale
l-16 Scienze dell'amministrazione e dell'organizzazione
l-18 Scienze dell'economia e della gestione aziendale
l-20 Scienze della comunicazione
l-30 Scienze e tecnologie fisiche
l-31 Scienze e tecnologie informatiche
l-32 Scienze e tecnologie per l'ambiente e la natura
l-33 Scienze economiche
l-35 Scienze matematiche
l-36 Scienze politiche e delle relazioni internazionali
l-37 Scienze sociali per la cooperazione, lo sviluppo e la pace
l-41 Statistica

and students with a degree awarded in Italy (ex dm 509/99) in the equivalent classes to those listed above.
A verification of the minimum access requirements is foreseen in the measure of:

● 12 CFUs in the area of computer science and mathematics, disciplinary sectors: MAT-01 - MAT-09, INF-01, ING-INF/05
● 12 CFUs in the area of economic and statistical sciences, subject areas: SECS-S/01, SECS-P/05, SECS-P/01, SECS-P/02, SECS-P/07, SECS-P/08

In particular, the preparation required for the computer and mathematics area includes: general mathematics, linear algebra, programming and basic computer science; for the economic-statistical area: inferential statistics, basic econometrics, basic microeconomics, basic macroeconomics and elements of business sciences.

The possession of linguistic skills at least at B2 level in the English language is a requirement for access. The language skills of the required level must be proven by presenting one of the proven international validity certificates of level B2 or the result of any B2 level test passed during the past academic carrier.

The profile of students regarding the knowledge required for access, motivations and individual preparation will be assessed on the basis of the evaluation of the curricula and through a selection interview conducted in English and exclusively by electronic means. This verification will be carried out by a specific "Selection Commission" of teachers appointed by the Faculty Board.

The selection committee reserves the right to admit on the basis of the results of the interview only the students who do not fully verify one or more of the minimum access requirements due to discrepancies in the system of credits or academic qualifications or other objective reasons identified by the analysis of the material attached to the application form.

Students with a foreign qualification are also required to ascertain the basic requirements equivalent to the minimum requirements for students with an Italian qualification.

The master's degree program also reserves the right to evaluate the possible inclusion of a programmed number, determined from year to year by the competent academic bodies, after evaluation of the structural, instrumental and personnel resources available for the functioning of the same.

Struttura del corso

The MSc program in Data Science and Economics consists of a defined course of 78 credits, an external 3-credit internship and a 9-credits final exam. An additional group of 30 credits is chosen by the student who has the faculty to choose between the courses suggested by the paths identified by the Faculty Board. Of these 30 credits 12 are totally free choice. The suggested paths identified by the Faculty Board are, but not limited to this range, the following: Economics, Business Innovation and Social Science. The Faculty Board reserves the right to set up new routes in synergy with other departments of the University.

The normal duration of the degree course in Data Science and Economics is two years. To obtain the degree, the acquisition of 120 university credits is required, including those reserved for the final exam.

Area didattica

Department od Economics, Management and Quantitative Methods, Via Conservatorio 7, Milano
Department of Informatics "Giovanni degli Antoni", Via Celoria 18, Milano

Obbligo di frequenza

No obligation

Formulazione e presentazione piano di studi
Students may choose a complete study plan starting from the first year.

Caratteristiche della prova finale
The final exam consists in the submission and public discussion, in front of a committee, of a master's dissertation.
The master's dissertation is an original piece of work, written by the candidate under the guidance of a supervisor.

Criteri di ammissione alla prova finale
Having earned at least 108 credits for the learning activities contemplated by his/her study plan and a minimum of 3 credits for internship, a student may be admitted to undertake the final exam leading to the award of the master's degree.
A total of 9 credits are reserved to the design, preparation and writing up of the master's dissertation.
The formal assignment of these credits can only take place at the moment when the dissertation is completed and discussed and the final exam is passed.

ESPERIENZA DI STUDIO ALL'ESTERO NELL'AMBITO DEL PERCORSO FORMATIVO

The University of Milan supports international mobility by providing its students with the opportunity to spend study and internship periods abroad. It is a unique chance to enrich your educational path in a new exciting environment.

The agreements entered into by the University with over 300 universities from 30 different countries under the European Erasmus+ programme allow regularly enrolled students to carry out part of their studies at one of the partner universities or to undertake internships at companies, training and research centres and other organizations.

Similar international mobility opportunities are provided outside Europe, through agreements with a number of prestigious institutions.

Cosa offre il corso di studi
One of the most effective policies adopted by European Union in the last years has been the internationalization of higher education. The various Erasmus programmes that have been implemented since the nineties have greatly increased the mobility of European students.
Being a brand-new programme with an internationally oriented educational core strategy, DSE promotes a wide internationalization of their students, and therefore strongly encourages them to spend part of their studies abroad in Erasmus+ Programmes.
Erasmus+ provides opportunities to study, train, gain work experience and skills. Students can go abroad from 3 up to 12 months (including a complementary traineeship period, if planned), and may receive additional grants for studying or training. At the end of their foreign stay, students get full recognition of completed activities in terms of credits for their degree. Student mobility is carried out in the framework of prior "inter-institutional agreements" between the sending and receiving institutions.
Students can also join the traineeship programme (Placement), by going abroad from 2 up to 12 months, starting their traineeship from the first year of study. For a traineeship which is an integral part of the curriculum, the sending institution must give full academic recognition for the period spent abroad. For a traineeship that is not part of the curriculum of the student, the sending institution shall provide recognition at least by recording this period in the Diploma Supplement or, in the case of recent graduates, by providing a traineeship certificate. Traineeship may also be established with private and public companies, educational or research centers other than the hosting institution, especially in the field of finance.
DSE academic staff has strong relations with some important European universities, in particular in Germany, Belgium, France, Spain and the Netherlands, and is actively involved in research and education networks, so that students' activity abroad (including the development of the final dissertation) can be successfully supervised.

Modalità di partecipazione ai programmi di mobilità - mobilità Erasmus
The students of the University of Milan can participate in mobility programmes, which last 3 to 12 months, through a public selection procedure.
Ad hoc commissions will evaluate:
• the candidate's proposed study programme abroad
• his/her foreign language proficiency
• the reasons behind his/her application
Call for applications and informative meetings
The public selection generally begins around February each year with the publication of a call for applications specifying the destinations, with the respective programme duration, requirements and online application deadline.

Every year, before the deadline for the call, the University organizes informative meetings to illustrate opportunities and rules for participation to students.

Erasmus+ scholarship
The European Union grants the winners of the Erasmus+ programme selection a scholarship to contribute to their mobility

costs, which is supplemented by the University funding for disadvantaged students.

Language courses
Students who pass the selections for mobility programmes can benefit from intensive foreign language courses offered each year by the University.

Learn more at https://www.unimi.it/en/international/study-abroad/studying-abroad-erasmus.

For assistance, please contact:
International Mobility Office
Via Santa Sofia 9 (second floor)
Tel. 02 503 13501-12589-13495-13502
E-mail: mobility.out@unimi.it
Desk opening hours: Monday to Friday 9 am - 12 noon

MODALITA' DI ACCESSO: 1° ANNO LIBERO CON VALUTAZIONE DEI REQUISITI DI ACCESSO

Informazioni e modalità organizzative per immatricolazione

All applicants (both foreign and Italian holding a bachelor's degree or expecting to obtain it by December 31st, 2020), with the exception of non-EU students not resident in Italy, must apply for admission to the DSE programme from March 1st, 2020 till June 30th, 2020.

Non-EU applicants not resident in Italy (holding a bachelor's degree or expecting to obtain it by December 31st, 2020), must apply for admission to the DSE programme from March 1st, 2020 till May 31st, 2020.

Non-EU applicants not resident in Italy are also required to submit a pre-application at the Italian Embassy of their own country before June 30th 2020 (this date may be subject to change according to Italian Ministry of Foreign Affairs).

Applicants will be selected on the basis of an interview, which aim is to ascertaining the applicants' motivations as well as their personal knowledge, competences, and skills in the core areas of the DSE programme.

Interviews of applicants will be held via Skype, or other equivalent telematic means, according to a calendar proposed individually to each applicant, from April to July 2020.

Further detailed information concerning the DSE programme and the admission procedures are available at https://dse.cdl.unimi.it/en, or can be asked directly to the programme Secretariat: dse@unimi.it.

Link utili per immatricolazione

https://www.unimi.it/en/study/enrolment

N° posti riservati a studenti extracomunitari non soggiornanti in Italia

50

1° ANNO DI CORSO Attività formative obbligatorie

Attività formativa	Cfu	Settore
Advanced Microeconomics and Macroeconomics	12	SECS-P/01
Coding for Data Science and Data Management	12	(6) SECS-S/01, (6) INF/01
Graph Theory, Discrete Mathematics and Optimization	12	(6) MAT/09, (6) SECS-S/06
Machine Learning, Statistical Learning, Deep Learning and Artificial Intelligence	12	(6) SECS-S/01, (6) INF/01
Micro-econometrics, Causal Inference and Time Series Econometrics	12	(6) SECS-S/01, (6) SECS-P/05
	Totale CFU obbligatori	60	

2° ANNO DI CORSO Attività formative obbligatorie

Attività formativa	Cfu	Settore
Algorithms for Massive Data, Cloud and Distributed Computing	12	INF/01
Cybersecurity and Privacy Preservation Techniques and Digital Security and Privacy	6	IUS/09, IUS/14, IUS/01
	Totale CFU obbligatori	18	

Attività a scelta

3 activities among the following.
Not more than two between: Fintech Industry, Portfolio Optimization, Risk Management.
Total 18 credits/ects

ECONOMICS (Suggested Path)		
Advanced Multivariate Statistics	6	SECS-S/01
Bayesian Analysis *chiusura evento per mancata copertura*	6	SECS-S/01
Fintech Industry	6	SECS-P/11

Game Theory		6	SECS-P/01
Global Firms and Markets		6	SECS-P/08
Knowledge Extraction and Information Retrieval		6	INF/01
Labour Economics and Policy Evaluation		6	SECS-P/01
Numerical Methods for Finance		6	SECS-S/01
Patients' Needs and Healthcare Markets		6	SECS-P/01
Portfolio Optimization		6	SECS-S/06
Probabilistic Modeling		6	SECS-S/01
Risk Management		6	SECS-S/06
BUSINESS INNOVATION (Suggested Path)			
Advanced Multivariate Statistics		6	SECS-S/01
Digital Business Strategies		6	SECS-P/07
Fintech Industry		6	SECS-P/11
Intellectual Property for Business: Strategy and Analysis		6	SECS-P/10
Knowledge Extraction and Information Retrieval		6	INF/01
Marketing Analytics		6	SECS-P/08
Probabilistic Modeling		6	SECS-S/01
Project Managements and Innovation in the Era of Big Data		6	SECS-P/08
Text Mining and Sentiment Analysis		6	(3) SECS-S/01, (3) INF/01
SOCIAL SCIENCE (Suggested Path)			
Advanced Multivariate Statistics		6	SECS-S/01
Digital Society		6	SPS/07
Game Theory		6	SECS-P/01
Labour Economics and Policy Evaluation		6	SECS-P/01
Patients' Needs and Healthcare Markets		6	SECS-P/01
Probabilistic Modeling		6	SECS-S/01
Public Opinion Research		6	SPS/11
Social Network Analysis		6	INF/01
Text Mining and Sentiment Analysis		6	(3) SECS-S/01, (3) INF/01
Altre attività a scelta			
Students must earn 12 credits for elective activities.			
Attività conclusive			
Internship/Stage		3	NA
Final Exam		9	NA
	Totale CFU obbligatori	12	

PROPEDEUTICITA'

None