

BACHELOR IN DATA SCIENCE**Main Language of Instruction:**French ☐ English ☒ Arabic ☐**Campus Where the Program Is Offered:** CDB**OBJECTIVES**

The Bachelor in Data Science lies at the intersection of mathematics and computer science. The program covers programming and data analysis for big data management and engineering, as well as mathematical tools such as probability and statistics for data analysis and interpretation. It also includes courses in artificial intelligence and machine learning, enabling students to extract insights from data and support informed decision-making. By combining cutting-edge technologies, data-driven decision-making, and ethical practices, the program prepares students to become industry leaders who drive innovation, efficiency, and sustainability.

PROGRAM LEARNING OUTCOMES (COMPETENCIES)

- Apply various mathematical techniques for processing problems related to massive quantities of data.
- Write computer programs in languages suitable for data science to collect, clean, and analyze data.
- Communicate the results of data analysis in oral, written, and visual form to both technical and non-technical audiences.
- Advocate for ethical decisions in the use of data.

PROGRAM REQUIREMENTS

240 credits: Required courses (231 credits), Institution's elective courses (9 credits), and USJ General Education Program (37 credits – may be part of the above categories).

Required Courses (231 Cr.)

Applied Linear Algebra (6 Cr.); Artificial Intelligence (6 Cr.); C++ Programming (6 Cr.); Calculus I (6 Cr.); Calculus II (6 Cr.); Calculus III (6 Cr.); Computer Programming I (6 Cr.); Computer Programming II (6 Cr.); Cybersecurity (4 Cr.); Data Engineering Fundamentals (3 Cr.); Data Mining (6 Cr.); Data Protection (3 Cr.); Data Structures and Algorithms (4 Cr.); Data Tools and Preparation (4 Cr.); Data Visualization (6 Cr.); Deep Learning (6 Cr.); Descriptive Statistics (4 Cr.); Discrete Mathematics (5 Cr.); Elementary Mathematics I (6 Cr.); Elementary Mathematics II (6 Cr.); Emirati Studies (6 Cr.); English Language (5 Cr.); Ethics for Data Science (3 Cr.); Financial Data Science (6 Cr.); Foundations of Data Science (5 Cr.); Internet Programming (5 Cr.); Internship I (3 Cr.); Internship II (3 Cr.); Introduction to Big Data (6 Cr.); Introduction to Business Analytics (3 Cr.); Introduction to Data Science (3 Cr.); Introduction to French Language (3 Cr.); Introduction to Machine Learning (4 Cr.); Machine Learning (6 Cr.); Marketing Data Science (5 Cr.); Matrix Computations (6 Cr.); Natural Language Processing (6 Cr.); Probability for Data Science (6 Cr.); Professional English (3 Cr.); Project Management (6 Cr.); R Programming for Data Science (4 Cr.); Relational Databases (6 Cr.); Science, Society and Sustainability (5 Cr.); Statistical Analysis of Data (6 Cr.); Statistics for Data Science (6 Cr.); Web Application (6 Cr.).

Institution's Elective Courses (9 Cr.), to be chosen from the list below:

High Impact Communication Skills (3 Cr.); Health Data Analytics (3 Cr.); Sports Analytics (3 Cr.); Personal Development and Time Management (3 Cr.); Successful Job Hunting (3 Cr.); Designing Business Models (3 Cr.).

General Education Program (37 Cr.)

SUGGESTED STUDY PLAN

Semester 1

Code	Course Name	Credits
584MAT1L1	Elementary Mathematics I	6
584PYT1L1	Computer Programming I	6
584DSTAL2	Descriptive Statistics	4
584INDSL1	Introduction to Data Science	3
584SSSBL1	Science, Society and Sustainability	5
584EMIRL1	Emirati Studies	6
	Total	30

Semester 2

Code	Course Name	Credits
584MAT2L2	Elementary Mathematics II	6
584CPR2L2	Computer Programming II	6
584DTAPL2	Data Tools and Preparation	4
584INBAL2	Introduction to Business Analytics	3
584ENGLL2	English Language	5
584FRENL2	Introduction to French Language	3
	Institution's Elective Course	3
	Total	30

Semester 3

Code	Course Name	Credits
584CAL1L3	Calculus I	6
584INPRL3	Internet Programming	5
584DMATL3	Discrete Mathematics	5
584FODSL3	Foundations of Data Science	5
584DPROL3	Data Protection	3
584EFDSL3	Ethics for Data Science	3
	Institution's Elective Course	3
	Total	30

Semester 4

Code	Course Name	Credits
584LALGL4	Applied Linear Algebra	6
584CAL2L4	Calculus II	6
584PROBL4	Probability for Data Science	6
584RDATL4	Relational Databases	6
584CPPPL4	C++ Programming	6
	Total	30

Semester 5

Code	Course Name	Credits
584CAL3L5	Calculus III	6
584DSALL5	Data Structures and Algorithms	4
584LABRL5	R Programming for Data Science	4
584MCOML5	Matrix Computations	6
584STDSL5	Statistics for Data Science	6
584INMLL5	Introduction to Machine Learning	4
	Total	30

Semester 6

Code	Course Name	Credits
584ARINL6	Artificial Intelligence	6
584DVISL6	Data Visualization	6
584INT1L6	Internship I	3
584SADAL6	Statistical Analysis of Data	6
584DENGL6	Data Engineering Fundamentals	3
584PENGL6	Professional English	3
	Institution's Elective Course	3
	Total	30

Semester 7

Code	Course Name	Credits
584DMINL7	Data Mining	6
584IBDAL7	Introduction to Big Data	6
584WAPPL7	Web Application	6
584MCLNL7	Machine Learning	6
584FNDSL7	Financial Data Science	6
	Total	30

Semester 8

Code	Course Name	Credits
584DLNGL8	Deep Learning	6
584INT2L8	Internship II	3
584MADSL8	Marketing Data Science	5
584NLPRL8	Natural Language Processing	6
584CYSCL8	Cybersecurity	4
584PRMNL8	Project Management	6
	Total	30

COURSE DESCRIPTION

584MAT1L1	Elementary Mathematics I	6 Cr.
This course presents the main methodological tools necessary for the algebra, probability, and geometry courses in the undergraduate program. It consists of theory without proofs and direct application exercises. Students who complete this course will be able to manipulate sets, combinatorial problems, vectors and complex numbers. Additionally, they will be capable of studying graphs and circular functions.		
584PYT1L1	Computer Programming I	6 Cr.
This course introduces students to the concepts of algorithms and programming using pseudocode and the Python language.		
584DSTAL2	Descriptive Statistics	4 Cr.
This course teaches students how to use the statistical concepts essential for data science. The notions acquired will be used in a practical way in their work during the collection, analysis and interpretation of data.		
584INDSL1	Introduction to Data Science	3 Cr.
This course introduces students to data science, its main applications, and its growing role in contemporary organizations and society. It covers the key stages of the data science workflow, including data collection, preparation, analysis, visualization, modeling, and communication of results. Students will explore different types of data and real-world applications in areas such as business, health, finance, sports, and digital services. The course also provides an introduction to artificial intelligence, machine learning, ethics, privacy, and responsible data use.		
584SSBL1	Science, Society and Sustainability	5 Cr.
This course introduces students to scientific reasoning and to the role of natural sciences in understanding contemporary societal and environmental challenges. It covers measurement, accuracy, uncertainty and the interpretation of scientific evidence, with selected applications related to energy, climate, pollution, water quality, health and sustainable development. Through the study of scientific information and simple datasets, students will develop scientific literacy and critical awareness of how evidence-based decisions can contribute to sustainable societies.		
584EMIRL1	Emirati Studies	6 Cr.
This course examines the main characteristics and distinctive features of UAE society. It covers the country's geography and historical development leading to the establishment of the UAE, as well as population growth, demographic characteristics, and economic and social development. The course also explores family and tribal structures, the system of governance, the distinctive characteristics of each emirate, and the services provided to society before and after the discovery of oil. In addition, students will examine cultural, social, and media organizations within civil society and selected social phenomena, their consequences, and proposed solutions. Through the course, students will develop their speaking, writing, and analytical reading skills.		
584MAT2L2	Elementary Mathematics II	6 Cr.
This course presents the main methodological tools necessary for the calculus and algebra courses in the undergraduate program. This course consists of theory without proofs and direct application exercises. Students who complete this course will be able to manipulate sequences. Additionally, they will be capable of studying various elements in calculus: calculating limits and derivatives, analyzing monotonicity, and computing integrals over an interval.		
584CPR2L2	Computer Programming II	6 Cr.
This course teaches students how to write simple to complex programs using the Python language.		

584DTAPL2	Data Tools and Preparation	4 Cr.
------------------	-----------------------------------	--------------

This course introduces students to practical tools and methods for preparing data before analysis. Students will learn how to work with common data formats such as spreadsheets and CSV files, identify and correct missing, duplicated or inconsistent values, transform and organize data, and prepare structured datasets for further analysis. The course also introduces basic data queries and reporting tools, enabling students to produce clean datasets and simple data summaries or dashboards for decision-making.

584INBAL2	Introduction to Business Analytics	3 Cr.
------------------	---	--------------

This course introduces students to the use of data for understanding business situations and supporting decision-making. It covers basic business questions, key performance indicators, simple analysis of sales, customer and operational data, and the interpretation of tables, charts and dashboards. Through introductory case studies and practical activities, students will learn how to translate data observations into clear business insights and recommendations.

584ENGLL2	English Language	5 Cr.
------------------	-------------------------	--------------

This course is offered at three levels: C, B, and A. Each level develops the language skills and tools required for effective oral and written communication in English. Through a variety of materials and activities, students will strengthen the linguistic and interpersonal skills needed for informative and persuasive public speaking and academic writing.

584FRENL2	Introduction to French Language	3 Cr.
------------------	--	--------------

This course develops the four core French language skills: listening, reading, speaking, and writing. Through exercises adapted to the elementary level, students will learn to communicate in simple everyday situations, construct grammatically correct sentences, understand basic spoken and written French, and produce short oral and written texts.

584CAL1L3	Calculus I	6 Cr.
------------------	-------------------	--------------

This course equips students with the foundational calculus skills necessary for problem-solving in data science and related fields. Students will learn to compute and apply limits, derivatives and integrals in order to analyze functions, model rates of change, solve optimization problems and determine areas. The course also introduces complex numbers and their algebraic, trigonometric and exponential representations, providing mathematical tools that support further studies in probability, statistics, machine learning and applied modeling.

584INPRL3	Internet Programming	5 Cr.
------------------	-----------------------------	--------------

This course introduces students to the fundamentals of web development using HTML and CSS. Students will learn how to create structured and accessible web pages, format textual and multimedia content, develop user-friendly layouts, and apply responsive design principles. The course also introduces basic concepts related to the internet, web accessibility, ergonomics and webpage optimization, providing the foundation required for later development of data-driven web applications.

584DMATL3	Discrete Mathematics	5 Cr.
------------------	-----------------------------	--------------

This course introduces the fundamental concepts of discrete mathematics required in computer science and data science. It covers mathematical logic, propositions, predicates, proof techniques, sets, functions, relations, divisibility, modular arithmetic and the Euclidean algorithm. Through theoretical reasoning and applied exercises, students will develop the ability to analyze discrete structures and construct rigorous arguments that support later work in algorithms, programming and computational problem-solving.

584FODSL3	Foundations of Data Science	5 Cr.
------------------	------------------------------------	--------------

This course provides students with a structured foundation in the concepts, processes and tools used in data science. It introduces the data science lifecycle, data sources, exploratory data analysis, basic data manipulation, databases, data mining, big data, machine learning and data visualization. Through practical exercises and



real-world examples, students will develop an understanding of how data is collected, prepared, explored and communicated in order to support evidence-based decision-making.

584DPROL3	Data Protection	3 Cr.
This course provides an understanding of the legal and regulatory frameworks governing the collection, processing, storage and protection of personal data, with particular attention to their application in data science. Students will explore key principles of data protection, personal and sensitive data, lawful processing, privacy risks, security measures and relevant regulatory frameworks such as the GDPR. The course prepares students to recognize data protection responsibilities and apply responsible practices when handling personal data in academic and professional contexts.		
584EFDSL3	Ethics for Data Science	3 Cr.
This course explores the ethical considerations associated with the collection, analysis and use of data in contemporary society. It introduces ethical principles and approaches, privacy and informed consent, responsible data science frameworks, algorithmic bias, model interpretability, fairness and professional conduct. Through discussion of practical cases, students will learn to identify ethical risks and promote responsible decision-making in data science and artificial intelligence applications.		
584LALGL4	Applied Linear Algebra	6 Cr.
This course provides a modern introduction to linear algebra and its applications in data science and related fields. Students will study systems of linear equations, matrices, determinants, vector spaces, inner product spaces, eigenvalues, eigenvectors and linear transformations. The course emphasizes the use of linear algebra tools to represent, analyze and solve applied problems arising in data analysis, scientific computing, digital engineering and business applications.		
584CAL2L4	Calculus II	6 Cr.
This course develops students' knowledge of advanced calculus concepts and techniques. It covers integration methods, sequences and series, Taylor and Maclaurin approximations, multivariable functions and partial derivatives, optimization of functions of several variables, parametric curves, polar coordinates, vectors and three-dimensional geometry. Through applied exercises, students will develop mathematical tools required for further work in modeling, optimization, probability, machine learning and scientific computation.		
584PROBL4	Probability for Data Science	6 Cr.
This course introduces the mathematical principles required to analyze and model random phenomena in data science. It covers probability spaces and events, counting techniques, conditional probability, Bayes' theorem, independence, discrete and continuous random variables, expected values, probability distributions, jointly distributed variables, covariance and correlation. The course also introduces the law of large numbers and the central limit theorem, providing the theoretical foundation required for subsequent courses in statistics, machine learning and data analysis.		
584RDATL4	Relational Databases	6 Cr.
This course introduces the fundamental concepts and practical applications of relational database systems. Students will learn how to model, design, create, query and manage relational databases using SQL. The course covers entity-relationship modeling, database schemas, keys, relationships, normalization, data manipulation, intermediate and advanced SQL queries, integrity constraints, database administration, data quality and an introduction to data warehousing. Through practical exercises, students will develop the skills required to manage structured data in data science and information systems applications.		
584CPPPL4	C++ Programming	6 Cr.
This course introduces students to programming in C++ and develops their understanding of object-oriented programming principles. Students will learn C++ syntax, variables, operators, input and output operations, conditional and iterative structures, functions, arrays, strings and basic file handling. The course then introduces		





classes and objects, constructors and destructors, encapsulation, inheritance, polymorphism and virtual functions. Through practical programming exercises, students will develop the foundations required for the subsequent study of data structures, algorithms and efficient computational applications.

584CAL3L5	Calculus III	6 Cr.
------------------	---------------------	--------------

This course introduces students to advanced calculus concepts, with a focus on multivariable calculus, vector calculus and differential equations. Students will study partial derivatives, the chain rule, multiple integrals in different coordinate systems, line and surface integrals, vector fields, Green's theorem, Stokes' theorem, the divergence theorem and second-order linear differential equations. Through theoretical and applied exercises, students will develop mathematical tools useful in scientific modeling, optimization, numerical methods and advanced data science applications.

584DSALL5	Data Structures and Algorithms	4 Cr.
------------------	---------------------------------------	--------------

This course introduces the fundamental concepts of data structures and algorithms using the C++ programming language. Students will learn how to analyze algorithmic complexity and implement efficient solutions using pointers, recursion, sorting algorithms, linked lists, stacks, queues, binary trees and binary search trees. Building on the programming skills acquired in the previous semester, the course strengthens students' ability to select appropriate data structures and design efficient computational solutions for data-oriented problems.

584LABRL5	R Programming for Data Science	4 Cr.
------------------	---------------------------------------	--------------

This course provides students with practical experience in using the R programming language for data manipulation, statistical analysis, visualization and reporting. Students will learn how to work with R data types and structures, import and prepare datasets, reshape and merge data, apply statistical procedures, create effective visualizations and use packages such as dplyr. The course also introduces reproducible reporting with R Markdown and basic interactive applications with Shiny, enabling students to apply R to real-world data science tasks.

584MCOML5	Matrix Computations	6 Cr.
------------------	----------------------------	--------------

This course provides students with a comprehensive understanding of numerical linear algebra and its role in data science and scientific computing. It covers matrix factorizations, numerical methods for solving linear systems, stability and perturbation analysis, structured linear equation and eigenvalue problems, singular value decomposition and large-scale matrix computations. Particular emphasis is placed on applications of matrix methods in data compression, dimensionality reduction, image processing, recommendation systems and computational modeling.

584STDLSL5	Statistics for Data Science	6 Cr.
-------------------	------------------------------------	--------------

This course develops the statistical foundations required for data science by introducing estimation, confidence intervals, hypothesis testing and statistical decision-making. Students will study point estimation, sampling distributions, confidence intervals for population parameters, one-sample and two-sample hypothesis tests, chi-square goodness-of-fit and independence tests, and the interpretation of p-values. Through practical applications and the use of statistical software, students will learn to select appropriate statistical procedures, analyze data and communicate evidence-based conclusions.

584INMLL5	Introduction to Machine Learning	4 Cr.
------------------	---	--------------

This course provides an introductory foundation in machine learning for data science students. It introduces the main concepts of supervised and unsupervised learning, features and target variables, training and testing datasets, data preparation, overfitting and model evaluation. Students will apply basic algorithms such as linear regression, logistic regression, k-nearest neighbors, decision trees and k-means clustering using Python libraries on simple real-world datasets. The course prepares students for subsequent courses in Machine Learning, Data Mining, Artificial Intelligence and Deep Learning.



584ARINL6	Artificial Intelligence	6 Cr.
------------------	--------------------------------	--------------

This course introduces the fundamental concepts and techniques underlying the construction of intelligent computer systems. Students will study intelligent agents, problem-solving and search algorithms, game playing, constraint satisfaction, knowledge representation, logical reasoning, planning and decision-making under uncertainty. The course also introduces selected learning techniques and neural network concepts, allowing students to understand the broader context of artificial intelligence before progressing to more specialized courses in machine learning, deep learning and natural language processing.

584DVISL6	Data Visualization	6 Cr.
------------------	---------------------------	--------------

This course introduces students to the principles, techniques and tools of data visualization for effective analysis and communication. Students will learn how to select and design appropriate visual representations for different types of data, identify patterns and relationships, create dashboards and develop clear visual narratives to support decision-making. Through practical activities using data visualization tools and programming libraries, students will analyze real datasets and communicate data-driven findings to technical and non-technical audiences.

584INT1L6	Internship I	3 Cr.
------------------	---------------------	--------------

This internship enables students to apply the knowledge and skills acquired during the first three years of the program in a professional or applied setting. Students may engage in tasks involving data collection, data preparation, programming, statistical analysis, visualization, ethical handling of data and interpretation of results. The internship provides an initial opportunity to connect theoretical learning with practical data science work. By the end of this internship, students will be required to submit a written report describing the work performed and the skills developed.

584SADAL6	Statistical Analysis of Data	6 Cr.
------------------	-------------------------------------	--------------

This course provides students with practical methods for analyzing and interpreting real datasets using statistical software. It covers the application of hypothesis testing, analysis of variance, non-parametric tests, linear and multiple regression, and selected multivariate data analysis techniques. Using R, students will learn how to select suitable statistical methods, verify assumptions, interpret results and communicate evidence-based conclusions in applied data science contexts.

584DENGL6	Data Engineering Fundamentals	3 Cr.
------------------	--------------------------------------	--------------

This course introduces students to the fundamental concepts and practices involved in collecting, transforming, storing and preparing data for analysis. Students will study common data sources and formats, including CSV, JSON, databases and application programming interfaces, together with the principles of ETL processes, data pipelines, data validation and data quality management. Through introductory practical activities, students will learn how to organize data workflows and prepare reliable datasets for analytics and machine learning applications, providing a foundation for the subsequent study of big data systems.

584PENGL6	Professional English	3 Cr.
------------------	-----------------------------	--------------

This course aims to develop students' ability to communicate effectively in professional and academic contexts related to data science and information technology. Students will acquire specialized vocabulary, analyze professional and scholarly texts, practice summarizing and reporting information, and develop oral communication skills relevant to workplace situations. The course supports students in preparing professional documents and presenting technical information clearly and appropriately.

584DMINL7	Data Mining	6 Cr.
------------------	--------------------	--------------

This course introduces students to the main concepts and techniques used to discover meaningful patterns and knowledge from data. Students will study the data mining process, data preprocessing, association rule mining, classification, clustering and model evaluation. The course emphasizes the selection and interpretation of appropriate techniques for different types of data mining problems, while addressing practical applications and ethical considerations related to the extraction of knowledge from data.

584IBDAL7	Introduction to Big Data	6 Cr.
------------------	---------------------------------	--------------

This course introduces students to the concepts, technologies and applications associated with large-scale data processing. Students will learn how big data differs from traditional data, examine its main characteristics and explore distributed storage and processing frameworks such as Hadoop, MapReduce and Apache Spark. The course also introduces non-relational databases, batch and stream processing, and practical big data applications in fields such as healthcare, marketing, digital services and agriculture.

584WAPPL7	Web Application	6 Cr.
------------------	------------------------	--------------

This course equips students with the knowledge and skills required to design, develop and deploy web applications for data science purposes. Students will study front-end and back-end development concepts, database integration, interactive data visualization, web security and the integration of analytical models into web-based applications. Through practical work, students will learn how to build data-driven web applications that communicate insights effectively and support user interaction with datasets and analytical results.

584MCLNL7	Machine Learning	6 Cr.
------------------	-------------------------	--------------

This course develops students' understanding of machine learning methods and their application to real-world data science problems. Building on the introductory machine learning course, students will study supervised and unsupervised learning techniques, feature preparation, model selection, regularization, cross-validation, hyperparameter tuning and performance evaluation. The course covers algorithms such as multiple and regularized regression, logistic regression, decision trees, ensemble methods, support vector machines, clustering and dimensionality reduction. Through practical projects using Python, students will learn to develop, evaluate and interpret machine learning solutions in a responsible manner.

584FNDSL7	Financial Data Science	6 Cr.
------------------	-------------------------------	--------------

This course introduces students to the application of data science methods in financial contexts. Students will learn how to work with financial and economic datasets, calculate and interpret returns, volatility and risk indicators, analyze financial time series and explore relationships between financial variables. The course introduces data-driven applications such as portfolio analysis, credit risk assessment, fraud detection and basic forecasting. Through practical activities and case studies, students will apply statistical, visualization and machine learning tools to support financial decision-making while considering ethical and responsible use of financial data.

584DLNGL8	Deep Learning	6 Cr.
------------------	----------------------	--------------

This course introduces students to deep learning methods and their applications in contemporary data science and artificial intelligence. Students will study artificial neural networks, activation functions, loss functions, gradient-based learning, backpropagation, regularization and model evaluation. The course then introduces convolutional neural networks for image data, recurrent and sequence-based models, attention mechanisms and transformers. Through practical activities using modern deep learning libraries, students will learn how to train, evaluate and interpret deep learning models while considering computational limitations, bias, fairness and responsible AI use.

584INT2L8	Internship II	3 Cr.
------------------	----------------------	--------------

This internship enables students to integrate and apply the knowledge and skills acquired throughout the Bachelor in Data Science in a professional or applied project setting. Students may engage in tasks involving data collection, data preparation, statistical analysis, machine learning, data mining, visualization, ethical handling of data and interpretation of results using appropriate programming tools. The internship allows students to complete a substantial applied data science experience, from raw data to meaningful conclusions. By the end of this internship, students must submit a detailed written report and present their work and findings to a jury.

584MADSL8	Marketing Data Science	5 Cr.
------------------	-------------------------------	--------------

This course introduces students to data science methods and modeling approaches used in marketing decision-making. Students will study marketing data, key performance indicators, customer behavior analysis, attribution modeling, marketing mix modeling and selected Bayesian and predictive approaches. Through case studies



and practical applications, students will learn how to analyze marketing performance, interpret customer and campaign data, derive actionable insights and support the optimization of marketing strategies through data-driven decisions.

584NLPRL8	Natural Language Processing	6 Cr.
------------------	------------------------------------	--------------

This course introduces students to Natural Language Processing, a field of artificial intelligence concerned with analyzing, understanding and generating human language. Students will study text preprocessing methods such as tokenization, stemming and lemmatization, together with techniques including sentiment analysis, named entity recognition and topic modeling. The course also introduces text representation, machine learning for text data, word embeddings, recurrent neural networks, attention mechanisms and transformers. Through practical applications using NLP libraries and modern language models, students will learn to build and evaluate solutions for real-world textual data problems.

584CYSCL8	Cybersecurity	4 Cr.
------------------	----------------------	--------------

This course introduces students to the fundamental concepts and practices of cybersecurity, with particular attention to the protection of data, systems and digital services. Students will study common cyber threats and vulnerabilities, authentication and access control, secure communication, basic cryptographic principles, network and application security, incident awareness and risk mitigation. The course also addresses security issues relevant to data science, including the protection of datasets, models, cloud-based resources and personal information, enabling students to recognize security risks and adopt responsible practices in data-driven environments.

584PRMNL8	Project Management	6 Cr.
------------------	---------------------------	--------------

This course introduces students to the principles and practices required to plan, organize, execute and evaluate projects in contemporary organizational contexts. Students will study project objectives, scope, stakeholders, scheduling, resource allocation, risk management, teamwork, communication and project evaluation. The course also explores innovation, entrepreneurship and sustainability by encouraging students to develop project ideas that respond to real needs, create value and consider social and environmental impact. Through applied activities and a project proposal, students will develop the skills needed to manage collaborative initiatives responsibly and effectively.

