Syllabus

BSc (honours) in Computer Engineering & Artificial Intelligence

Laurea

EQF Level: 6 | 180 ECTS

EPICODE
Institute of Technology

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Bachelor | EQF Level: 6 | 3 anni | 180 ECTS

Primo anno — 60 ECTS

1° semestre

Esami	ECTS
Web Development	5
Computer Networks	6
Programming Principles	6
Academic Reading and Writing in English	2
Computer Architectures	6
Discrete Mathematics	5

2° semestre

Esami	ECTS
Foundational Mathematics	5
Critical Thinking	2
Introduction to System Programming	6
Data Structures and Algorithms	6
Object-Oriented Programming	6
Front-end Programming	5

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Bachelor | EQF Level: 6 | 3 anni | 180 ECTS

Secondo anno — 60 ECTS

1° semestre

Esami	ECTS
Introduction to Databases	6
Back-end Programming	6
Cloud Computing Infrastructure	6
Introduction to Artificial Intelligence	6
Software Development Methodologies	6

2° semestre

Esami	ECTS
Introduction to Computer Vision	6
Human-Computer Interaction	6
Cloud Development and Ops	6
Testing, Code Quality & CD/CI	6
Introduction to Machine Learning	6

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Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Bachelor | EQF Level: 6 | 3 anni | 180 ECTS

Terzo anno — 60 ECTS

1° semestre | Esami a scelta

Exams	ECTS
IoT Development	6
Mobile Development	6
Bitcoin & Blockchain	6
Web3	6
Data Analysis	6
Introduction to Deep Learning & NLP *(compulsory)*	6
Introduction to Large Language Models *(compulsory)*	6
Project Management and Quality Assurance	6
Marketing Technologies	6
AWS Cloud Practitioner	6
Introduction to Cyber Security	6

2° semestre | Final dissertation | 24 ECTS

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Year 1

60 ECTS

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 1 | Semester 1

Web Development — 5 ECTS

Program

- Introduction to Web Development
- HTML
- CSS
- JavaScript Fundamentals
- DOM Manipulation and Events
- Responsive Web Design
- Front-End Frameworks
- Back-End Development Basics
- Web Security
- Web Deployment and Hosting

Learning outcomes

Knowledge & Understanding

- Understanding the HTML syntax and usage
- Understanding the CSS syntax and usage
- Understanding the JavaScript syntax and usage
- What is the DOM and how to interact with it
- Dynamic Web Applications
- Front-end Framework
- Server Side Rendering and Backend Development
- Deployment and hosting

Skills

- Creation of web pages using HTML, CSS and JavaScript
- Usage of a frontend framework between Angular, React and Vue.js
- Application deployment and hosting
- Interact with Web Services using AJAX
- Create Web Services with NodeJS

Exam methodology **Project + Interview**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 1 | Semester 1

Computer Networks — 6 ECTS

Recorded lectures

Program

- Introduction to Computer Networks
- Network Models and Protocols
- Network Devices and Equipment
- Network Addressing and Subnetting
- Network Transmission Media
- Network Protocols
- Network Security
- Network Troubleshooting and Performance
- Network Management and Administration
- Emerging Network Technologies and Trends

Learning outcomes

Knowledge & Understanding

- Understanding how networks work
- Understanding the ISO model
- Understanding how TCP works
- Understanding how IP works
- Knowing the difference and usage of the networking hardware
- Basic understanding of IoT, cloud computing and virtualisation

Skills

- Diagnose network problems
- Troubleshooting connectivity issues
- Configure DHCP and devices IP configuration

Exam methodology **Written Assessment**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 1 | Semester 1

Programming Principles — 6 ECTS

Program

- Introduction to Programming
- Programming Fundamentals
- Functions and Modular Programming
- Arrays and Collections
- Object-Oriented Programming
- Error Handling and Exception Handling
- File I/O Operations
- Introduction to Data Structure
- Software Development Best Practices

Learning outcomes

Knowledge & Understanding

- Programming languages scenario
- Software development life cycle
- Programming Building Blocks
- Programming paradigms (functional, object oriented, procedural)
- Object Oriented Programming concepts (classes, objects, inheritance, polymorphism)
- Basic data structures (arrays, linked lists, stacks, queues)
- Version control using GIT

Skills

- Writing code using variables, conditional operators, loops, functions and arrays
- Handling exceptions and errors
- Writing and Reading files
- Use of GIT to manage version control

Exam methodology

Written Assessment

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 1 | Semester 1

Academic Reading and Writing in English 2 ECTS

Program

- Paragraph Structure
- Unity and Coherence
- From Paragraph to Essay
- Types of Essays
- Types of Sentences
- The Process of Academic Writing

Learning outcomes

Competences

- Use reading strategies to comprehend challenging texts;
- dentify the main and supporting ideas in what you read;
- Analyse academic writing in terms of rhetorical purpose, audience, content, genre, pattern of development, and stylistic features.

Knowledge

- How to write clear, and appropriate English for academic contexts;
- How to take effective notes from reading and research;
- How to summarise and reflect on reading and research.

Skills

- Use syntactic clues to interpret the meaning of complex sentences or new vocabulary. Find information by using reference tools, including online resources;
- Monitor comprehension and adjust reading strategy as measured by unit reading responses, reading tests, and quizzes.
- Understand writing process and method as measured by written essays, reading responses, and research paper.

Exam methodology

Multiple Choice Test

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 1 | Semester 1

Computer Architectures — 6 ECTS

Program

- Introduction to Computer Architectures
- Von Neumann Architecture
- CPU Organization and Instruction Set Architecture
- Memory Hierarchy
- Input/Output Organization
- Processor Pipeline
- Parallel Architectures
- Performance Evaluation and Metrics

Learning outcomes

Knowledge & Understanding

- Key components of a computer CPU, memory, I/O and control unit)
- History of computer architectures
- Von Neumann architecture
- CPU architectures, registries and addresses
- Memory architecture, levels and speed (cache, ram)
- The processor pipeline and the context switch
- Input output and buses
- The concept of parallel computing and the different taxonomies
- Performance evaluation and metrics

Exam methodology

Written Assessment

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 1 | Semester 1

Discrete Mathematics — 5 ECTS

Program

- Introduction to Discrete Mathematics
- Logic and Boolean Algebra
- Proof Techniques
- Combinatorics and Counting
- Graph Theory
- Relations and Functions
- Discrete Probability
- Discrete Structures

Learning outcomes

Knowledge & Understanding

- By the end of the study-unit the student will be able to:
- Demonstrate an understanding of the mathematical process and familiarity with the tools of proof and reasoning which will be applied in other study-units;
- Demonstrate knowledge of various topics (logic, set theory, etc.) and fundamental results which are used later on in the programme of study.

Skills

- By the end of the study-unit the student will be able to:
- Comprehend the underlying notions underneath many computing concepts, such as programming and databases;
- Reason formally about such concepts.

Exam methodology Written Test & Interview

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 1 | Semester 2

Foundational Mathematics — 5 ECTS

Program

- **Functions and Relations**
  - Functions: definition, types, properties
  - Injective, surjective, and bijective functions
  - Composition and inverse functions
  - Equivalence relations and partitions

- **Mathematical Proof Techniques**
  - Direct proof and proof by contrapositive
  - Proof by contradiction and proof by induction
  - Disproof techniques and counterexamples

- **Number Systems and Number Theory**
  - Natural numbers, integers, rational numbers, real numbers
  - Prime numbers, factorization, and divisibility
  - Modular arithmetic and congruence
  - Euclidean algorithm and greatest common divisor GCD

- **Sequences and Series**
  - Arithmetic and geometric sequences
  - Convergence and divergence of sequences
  - Infinite series and convergence tests
  - Power series, Taylor series, and Maclaurin series

- **Limits and Continuity**
  - Concept of limits and their properties
  - One-sided and infinite limits
  - Continuity of functions and their properties
  - Intermediate Value Theorem and Boundedness Theorem

- **Limits and Continuity**
  - Concept of limits and their properties
  - One-sided and infinite limits
  - Continuity of functions and their properties
  - Intermediate Value Theorem and Boundedness Theorem

- **Derivatives and Differentiation**
  - Definition and properties of derivatives
  - Differentiation rules and techniques
  - Applications of derivatives: optimization, related rates, curve sketching
  - Higher-order derivatives, concavity, and inflection points

- **Integrals and Integration**
  - Indefinite and definite integrals
  - Integration techniques: substitution, integration by parts
  - Applications of integrals: area, volume, average value
  - Numerical integration methods, improper integrals

- **Linear Algebra**
  - Vectors and Vector Spaces
  - Matrices, Determinants, and Linear Transformations
  - Systems of Linear Equations and Their Solutions

- **Probability and statistics**

Exam methodology

Written Assessment

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 1 | Semester 2

Critical Thinking — 2 ECTS

Program

- **Introduction to Critical Thinking**
  - What is Critical Thinking?
  - Importance and benefits of Critical Thinking
  - The difference between thinking and critical thinking

- **Elements of Thought & Intellectual Standards**
  - Clarity, accuracy, precision, relevance, depth, breadth, logic, and fairness
  - Role of questions and questioning techniques
  - Intellectual humility vs. intellectual arrogance

- **Logical Fallacies & Cognitive Biases**
  - Definition and understanding of logical fallacies
  - Common logical fallacies: Ad hominem, straw man, appeal to authority, etc.
  - Introduction to cognitive biases and their impact on reasoning

- **Evaluating Information & Arguments**
  - Assessing the credibility of sources
  - Recognizing biases in media and scholarly articles
  - Constructing and deconstructing arguments

- **Critical Thinking in Practice**
  - Critical thinking in daily life, workplace, and societal issues
  - Group activity: analyzing real-world arguments/news
  - Recap, reflection, and pathways for further enhancement of critical thinking skills

Exam methodology **Multiple Choice Test**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 1 | Semester 2

Introduction to Systems Programming — 6 ECTS

Program

- **Introduction to Systems Programming**
  - Overview of systems programming and its importance in computer science
  - Introduction to low-level languages (e.g., C) and their role in system-level development
  - Basic concepts of system calls, libraries, and the compilation process

- **C Programming Basics**
  - Introduction to the C programming language
  - Variables, data types, and operators
  - Control flow statements (conditionals and loops)
  - Functions and modular programming

- **File Handling and I/O Operations**
  - Reading from and writing to files
  - File management functions and file pointers
  - Standard input/output (stdio) and formatted I/O operations

- **Memory Management and Pointers**
  - Memory allocation and deallocation in C
  - Pointers and their applications
  - Dynamic memory management with malloc, calloc, and free

- **Process Management**
  - Introduction to processes and process control
  - Forking and creating child processes
  - Process synchronization and inter-process communication IPC

- **Introduction to Operating Systems**
  - Overview of operating systems and their functions
  - Understanding the kernel, user space, and system calls
  - Basic concepts of process scheduling and memory management

- **Threads and Concurrency**
  - Basics of multithreading
  - Thread creation and management
  - Synchronization and thread communication

- **File Systems**
  - File system organization and hierarchy
  - File operations and directory management
  - Disk allocation methods

- **Introduction to System-Level Programming Libraries**
  - Overview of system-level libraries (e.g., POSIX
  - Working with system-level functions and APIs
  - Examples of using system libraries for network programming, file handling, and inter-process communication

Exam methodology **Written Assessment**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 1 | Semester 2

Data Structures and Algorithms — 6 ECTS

Program

- Introduction to Data Structures and Algorithms
- Arrays and Linked Lists
- Stacks and Queues
- Trees and Binary Trees
- Graphs and Graph Algorithms
- Hash Tables
- Sorting Algorithms

Learning outcomes

Knowledge & Understanding

- Define and describe the time and space complexity of algorithms and explain how the Big O notation is used to determine both;
- List, describe, and compare the main abstract data types and also describe the various sorting, tree, and graph algorithms covered in class.

Skills

- Apply the Big O notation to determine the time and space complexity of segments of code;
- Comprehend why it is not feasible to implement algorithms with exponential time complexity;
- Implement the abstract data structures covered in class in a high level programming language;
- Code the sorting, tree, and graph algorithms covered in class.

Exam methodology **Written Assessment**

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Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 1 | Semester 2

Object-Oriented Programming — 6 ECTS

Program

- **Introduction to Object-Oriented Programming**
  - Overview of object-oriented programming OOP) concepts
  - Benefits of OOP and its role in software development
  - Comparison of procedural programming and OOP

- **Java Basics**
  - Introduction to the Java programming language
  - Setting up the development environment JDK, IDE
  - Syntax, variables, data types, operators, and control structures in Java

- **Classes and Objects**
  - Defining classes and objects in Java
  - Instance variables, constructors, and methods
  - Access modifiers (public, private, protected)
  - Encapsulation and information hiding

- **Inheritance and Polymorphism**
  - Inheritance hierarchy and superclass-subclass relationships
  - Overriding methods and using the super keyword
  - Polymorphism and dynamic method dispatch
  - Abstract classes and interfaces

- **Exception Handling**
  - Handling exceptions and error conditions in Java
  - Try-catch blocks and exception propagation
  - Custom exceptions and exception handling best practices

Collections and Generics
  - Working with collections framework in Java ArrayList, LinkedList, HashMap
  - Generics and parameterized types
  - Iterators and enhanced for loops

- **File I/O and Serialization**
  - Reading from and writing to files in Java
  - File input/output streams and file handling
  - Object serialization and deserialization

- **Multithreading**
  - Basics of multithreading in Java
  - Creating and managing threads Synchronization and thread communication

Exam methodology **Project & Interview**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 1 | Semester 2

Front-end Programming — 5 ECTS

Program

- **Introduction to Front-End Development and ReactJS**
  - Overview of front-end development and its importance in web applications
  - Introduction to React library and its key features
  - Setting up the development environment Node.js, React)

- **TypeScript Basics**
  - Introduction to TypeScript programming language
  - Variables, data types, operators, and control structures in TypeScript
  - Understanding modules and namespaces

- **React Components**
  - Building components in React
  - State, properties and extensions
  - Component lifecycle hooks and their usage

- **React Routing**
  - Setting up routes and navigation in React
  - Route parameters and route guards
  - Lazy loading and code splitting for efficient routing

- **Reactive Forms and Validation**
  - Creating and validating reactive forms in React
  - Form controls, form groups, and form validation
  - Handling form submissions and form state management

- **HTTP Communication and Data Retrieval**
  - Making HTTP requests in React
  - Handling asynchronous data retrieval and error handling

- **React-Bootstrap**
  - Introduction to React Bootstrap UI library
  - Using pre-built components and themes
  - Customizing and styling components

- **React Redux**
  - Understanding the concept of storage, actions and reducers
  - Implementing the pattern with react-redux
  - Using thunk for asynchronous activities

Exam methodology **Project & Interview**

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Computer Engineering & Artificial Intelligence

Year 2

60 ECTS

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 2 | Semester 1

Introduction to Databases — 6 ECTS

Program

- **Introduction to Databases**
  - Overview of databases and their role in modern computing
  - Types of databases: relational, NoSQL, and NewSQL
  - Database management systems DBMS) and their functions

- **Relational Databases and SQL**
  - Introduction to the relational model and its components
  - Creating databases and tables using SQL
  - Retrieving data using SELECT statements
  - Filtering, sorting, and joining data in SQL queries
  - Aggregation functions and grouping data
  - Modifying data using INSERT, UPDATE, and DELETE statements
  - Creating and managing database constraints (primary keys, foreign keys)

- **Normalization and Database Design**
  - Database normalization and its importance
  - Functional dependencies and normal forms (1NF, 2NF, 3NF ○ Entity-relationship ER) modeling and database design principles

- **Introduction to NoSQL Databases**
  - Overview of NoSQL databases and their characteristics
  - Types of NoSQL databases: document, key-value, columnar, graph
  - Comparing NoSQL databases with relational databases

- **Document-oriented Databases**
  - Introduction to document-oriented databases (e.g., MongoDB ○ Creating and querying documents)
  - Indexing and aggregation in document databases

- **Key-Value Databases**
  - Key-value database concepts and use cases
  - Basic operations on key-value stores (e.g., Redis)

Exam methodology **Written Assessment**

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Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 2 | Semester 1

Back-end Programming — 6 ECTS

Program

- **Introduction to Back-End Programming**
  - Overview of back-end programming and its role in web development
  - Introduction to Java as a server-side programming language
  - Setting up the development environment
- **Coding Basics for Back-End Development**
  - Syntax, variables, data types, operators, and control structures
  - Object-oriented programming OOP) concepts in Java
  - Exception handling and error management
- **Java Servlets**
  - Introduction to Java servlets and the Servlet API
  - Handling HTTP requests and responses
  - Servlet lifecycle and configuration
  - Session management and servlet filters
- **JavaServer Pages JSP**
  - Introduction to JSP and its role in server-side web development
  - JSP syntax and scriptlets
  - JSP directives, expressions, and declarations
  - JSP standard actions and custom tag libraries
- **JDBC and Database Connectivity**
  - Introduction to Java Database Connectivity JDBC
  - Establishing database connections and executing SQL queries
  - PreparedStatement and ResultSet for secure and efficient database operations
  - Handling transactions and managing database resources
- **Web Services and APIs**
  - Introduction to web services and API development
  - Creating RESTful APIs with Java
  - Implementing CRUD Create, Read, Update, Delete) operations
  - JSON parsing and serialization
- **Authentication and Security**
  - User authentication and authorization in Java applications
  - Implementing secure password storage and encryption
  - Protecting sensitive data and preventing common security vulnerabilities

Exam methodology **Project & Interview**

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Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 2 | Semester 1

Cloud Computing Infrastructure — 6 ECTS

Program

- **Introduction to Cloud Computing**
  - Overview of cloud computing and its benefits
  - Comparison of cloud service providers: AWS and Azure
  - Cloud deployment models: public, private, and hybrid

- **Cloud Computing Fundamentals**
  - Virtualization and hypervisor technologies
  - Infrastructure as a Service IaaS, Platform as a Service PaaS, and Software as a Service SaaS
  - Cloud service models and their characteristics

- **AWS or Azure Basics**
  - Introduction to the chosen cloud platform: AWS or Azure
  - Setting up an account and navigating the platform's console
  - Overview of essential services and terminology

- **Virtual Machines and Containerization**
  - Creating and managing virtual machines in the cloud
  - Containerization technologies (e.g., Docker)
  - Deploying and scaling containerized applications

- **Networking in the Cloud**
  - Virtual networks and subnets in the cloud
  - Setting up and configuring virtual private clouds VPCs
  - Load balancing and auto-scaling for high availability

- **Storage and Database Services**
  - Cloud storage options (e.g., AWS S3, Azure Blob Storage)
  - Relational and NoSQL database services (e.g., AWS RDS, Azure Cosmos DB)
  - Data migration and backup strategies

- **Serverless Computing and Function as a Service**
  - Introduction to serverless computing
  - Developing and deploying serverless functions
  - Integration with event-driven services (e.g., AWS Lambda, Azure Functions)

- **Security and Identity Management**
  - Cloud security best practices and compliance
  - Identity and access management in the cloud
  - Encryption, authentication, and authorization mechanisms

Exam methodology **Written Assessment**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 2 | Semester 1

Introduction to Artificial Intelligence — 6 ECTS

Program

- **Introduction to Artificial Intelligence**
  - Overview of artificial intelligence and its significance in various domains
  - History and evolution of AI
  - Ethical considerations in AI development and deployment

- **Problem Solving and Search Algorithms**
  - Problem-solving techniques in AI
  - Search algorithms: depth-first search, breadth-first search, and A* search
  - Heuristic functions and informed search strategies

- **Knowledge Representation and Reasoning**
  - Knowledge representation and its importance in AI
  - Propositional and predicate logic
  - Inference rules and logical reasoning
  - Introduction to expert systems

- **Machine Learning Fundamentals**
  - Introduction to machine learning and its applications
  - Supervised, unsupervised, and reinforcement learning
  - Classification and regression algorithms
  - Evaluation metrics for machine learning models

- **Neural Networks and Deep Learning**
  - Basics of neural networks and their architecture
  - Training neural networks: backpropagation algorithm, gradient descent
  - Deep learning architectures: convolutional neural networks CNNs, recurrent neural networks RNNs
  - Transfer learning and pre-trained models

- **Natural Language Processing**
  - Introduction to natural language processing NLP
  - Text preprocessing techniques: tokenization, stemming, and lemmatization
  - Language modeling and sentiment analysis
  - Named entity recognition and text classification
  - LLMS

Exam methodology **Written Assessment**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 2 | Semester 1

Software Development Methodologies — 6 ECTS

Program

- **Introduction to Software Development Methodologies**
  - Overview of software development methodologies and their importance
  - Waterfall, Agile, and hybrid approaches
  - Selection criteria for choosing a methodology

- **Waterfall Model**
  - Phases of the waterfall model: requirements, design, implementation, testing, deployment, and maintenance
  - Advantages and disadvantages of the waterfall model
  - Case studies and real-world examples

- **Agile Development**
  - Agile principles and values
  - Scrum framework: roles, artifacts, and ceremonies
  - Iterative and incremental development
  - User stories and product backlog management
  - Sprint planning, daily stand-ups, sprint reviews, and retrospectives

- **Agile Engineering Practices**
  - Test-driven development TDD
  - Continuous integration and continuous delivery CI/CD
  - Pair programming and code review
  - Refactoring and code quality

- **Kanban and Lean Software Development**
  - Kanban principles and practices
  - Visualization of work, (work-in-progress) WIP limits, and flow efficiency
  - Lean software development principles
  - Value stream mapping and waste reduction

- **Hybrid Approaches**
  - Combining different methodologies based on project needs
  - Agile hybrid models (e.g., Scrum of Scrums, SAFe)
  - Tailoring methodologies for specific project constraints

- **7. Project Management and Collaboration Tools**
  - Version control systems (e.g., Git)
  - Issue tracking and project management tools (e.g., Jira)
  - Communication and collaboration tools (e.g., Slack, Microsoft Teams)

Exam methodology **Written Assessment**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 2 | Semester 2

Introduction to Computer Vision

Program

- Introduction to Computer Vision
- Image Filtering and Enhancement
- Image Segmentation
- Feature Extraction and Description
- Object Detection
- Image Classification and Recognition
- Deep Learning for Image Generation
- Video Analysis and Tracking
- 3D Computer Vision
- Visual Scene Understanding
- Advanced Topics in Computer Vision

Learning outcomes

Competences

- Explain core concepts such as pixel manipulation, color models, and image filtering.
- Understand and apply geometric transformations such as scaling, rotation, and translation to images.
- Identify and describe key features in images, such as edges, corners, and blobs
- Develop proficiency in object detection and recognition
- Utilize motion analysis and tracking techniques for motion estimation, including optical flow and frame differencing.

Knowledge

- Identify the principles and applications of computer vision across different domains and industries.
- Define and compare different methods and techniques for image processing, analysis, and understanding.
- Draw machine learning and deep learning models to computer vision tasks such as image classification and object detection.
- Design and develop a computer vision web application and deploy it to the Cloud.

Exam methodology **Project & Interview**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 2 | Semester 2

Human-Computer Interaction — 6 ECTS

Program

- **Introduction to Human-Computer Interaction**
  - Overview of human-computer interaction HCI) and its significance
  - Historical background and evolution of HCI
  - Importance of user-centered design in HCI
- **Human Factors and Cognitive Psychology**
  - Human perception, cognition, and memory
  - Mental models and human information processing
  - Attention, learning, and decision-making in HCI
- **User-Centered Design**
  - Understanding user needs and requirements
  - User research techniques: interviews, surveys, and observations
  - Personas, scenarios, and user stories
  - Usability testing and evaluation methods
- **Interaction Design Principles**
  - Design principles for effective user interfaces
  - Visual design and aesthetics in HCI
  - Information architecture and navigation design
  - Interaction design patterns and guidelines
- **User Interface Design and Prototyping**
  - Wireframing and prototyping tools
  - Layout and composition principles
  - Responsive and adaptive design techniques
  - Gestures and interaction techniques
- **User Experience UX Design**
  - Introduction to user experience design
  - UX goals, metrics, and measurement
  - Designing for emotions and engagement
  - Usability heuristics and UX evaluation methods
- **Mobile and Web Interface Design**
  - Mobile interface design principles
  - Responsive web design and mobile-first approach
  - Designing for different screen sizes and devices
  - Mobile usability testing and considerations

Exam methodology **Project + Interview**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 2 | Semester 2

Cloud Development and Ops — 6 ECTS

Program

- **Introduction to Cloud Computing and Deployment Models**
  - Overview of cloud computing and its benefits
  - Comparison of cloud deployment models: public, private, and hybrid
  - Cloud service providers and their offerings

- **Cloud Infrastructure and Networking**
  - Virtualization and containerization technologies
  - Infrastructure as a Service IaaS) and Platform as a Service PaaS
  - Networking in the cloud: virtual networks, subnets, and load balancing

- **Cloud Application Development**
  - Introduction to cloud development platforms (e.g., AWS, Azure, Google Cloud)
  - Developing cloud-native applications
  - Cloud storage and database services
  - Integrating with cloud services (e.g., messaging, analytics)

- **DevOps Principles and Practices**
  - Introduction to DevOps and its benefits
  - Continuous integration and continuous delivery CI/CD
  - Infrastructure as Code IaC) and configuration management
  - Container orchestration and deployment automation

- **Cloud Security and Compliance**
  - Security considerations in cloud environments
  - Identity and access management IAM
  - Encryption and key management
  - Compliance and regulatory requirements in the cloud

- **Monitoring and Performance Optimization**
  - Cloud monitoring and log management
  - Performance optimization techniques
  - Autoscaling and load balancing for high availability
  - Cost optimization in cloud environments

- **Serverless Computing**
  - Introduction to serverless computing
  - Function as a Service FaaS) and serverless architecture
  - Developing and deploying serverless functions
  - Event-driven architectures and serverless patterns

Exam methodology **Written Assessment**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 2 | Semester 2

Testing, Code Quality & CD/CI — 6 ECTS

Program

- **Introduction to Software Testing**
  - Overview of software testing and its importance in software development
  - Testing process and the role of testing in the software development life cycle
  - Types of testing: unit, integration, system, and acceptance testing

- **Unit Testing**
  - Introduction to unit testing and test-driven development TDD
  - Unit testing frameworks (e.g., JUnit, NUnit)
  - Writing effective unit tests and test coverage
  - Mocking and stubbing dependencies

- **Integration Testing**
  - Integration testing concepts and strategies
  - Testing approaches for different integration scenarios (e.g., API testing, database testing)
  - Tools for integration testing (e.g., Postman, RestAssured)

- **System Testing and Acceptance Testing**
  - System testing techniques and approaches
  - Acceptance testing and user acceptance criteria
  - Test planning and test case management
  - Regression testing and test automation

- **Code Quality and Static Analysis**
  - Code quality metrics and guidelines
  - Code reviews and static code analysis tools (e.g., SonarQube)
  - Refactoring techniques for improving code quality
  - Code style and consistency

- **Continuous Integration/Continuous Delivery CI/CD**
  - Introduction to CI/CD and its benefits
  - Setting up a CI/CD pipeline
  - Automating build, test, and deployment processes
  - Configuration management and infrastructure as code

- **Test Automation and Test Frameworks**
  - Test automation frameworks (e.g., Selenium, Cypress)
  - Test automation strategies and best practices
  - Designing maintainable and scalable test automation suites
  - Continuous testing in CI/CD pipelines

Exam methodology **Written Assessment**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 2 | Semester 2

Introduction to Machine Learning — 6 ECTS

Program

- Supervised and Unsupervised Learning
- Regression Analysis
- Classification Techniques
- Clustering Methods
- Decision Trees
- Support Vector Machines
- Model Evaluation and Validation
- Overfitting and Underfitting
- Feature Selection and Engineering

Learning outcomes

Competences

- Work effectively in teams to design and implement machine learning projects.
- Evaluate and interpret data to derive meaningful insights and patterns.
- Develop novel solutions to complex problems using machine learning techniques

Knowledge

- Identify machine learning algorithms and explain their appropriate applications.
- Define key concepts such as supervised learning, unsupervised learning, and reinforcement learning.
- Describe the process of data preprocessing and feature engineering.
- List the steps involved in model training, validation, and testing.

Skills

- Apply machine learning algorithms to real-world datasets.
- Use machine learning frameworks like Scikit-learn, TensorFlow, or PyTorch.
- Design experiments to test and validate machine learning models.
- Use data engineering techniques to improve the data quality

Exam methodology **Written Assessment**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Year 3

60 ECTS

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 3 | Semester 1

IoT Development — 6 ECTS

Program

- **Introduction to IoT**
  - Understanding IoT and Its Applications
  - IoT Ecosystem: Devices, Connectivity, Cloud
  - IoT Trends and Industry Impact
  - IoT Hardware and Sensors
  - Selection and Introduction to IoT Development Platforms (e.g., Raspberry Pi, Arduino)
  - Sensors and Actuators: Types and Usage
  - Interfacing Sensors with Microcontrollers

- **IoT Programming**
  - Programming Languages for IoT Python, C/C
  - Developing IoT Applications: Data Acquisition and Processing
  - Connecting Hardware to Software

- **IoT Connectivity**
  - Communication Protocols Wi-Fi, Bluetooth, MQTT, LoRa, etc.)
  - Cloud Platforms for IoT AWS IoT, Azure IoT, Google Cloud IoT
  - Data Transfer and Device Management

- **IoT Project Development**
  - Project Ideation and Planning
  - Building IoT Solutions: From Prototyping to Deployment
  - Real-world IoT Applications and Use Cases

- **IoT Security and Ethics**
  - IoT Security Threats and Best Practices
  - Data Privacy and Ethical Considerations
  - Compliance and Regulatory Frameworks

- **IoT Future Trends and Challenges**
  - Emerging Technologies in IoT
  - Sustainability and Environmental Impact
  - Career Opportunities in IoT

Exam methodology **Written Assessment**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 3 | Semester 1

Mobile Development — 6 ECTS

Program

- **Introduction to Mobile Development**
  - Overview of Mobile Development Platforms (iOS, Android)
  - Importance of Mobile Apps
  - Mobile App Development Lifecycle
- **Mobile App Design and User Experience**
  - Principles of UI/UX Design
  - Wireframing and Prototyping
  - Design Guidelines for iOS and Android
- **Development Environments and Tools**
  - Xcode and Interface Builder (iOS)
  - Android Studio and Layout Editor Android)
  - Emulators and Physical Devices for Testing
- **Programming Languages for Mobile Development**
  - Introduction to Swift and Objective-C (iOS)
  - Introduction to Kotlin and Java Android)
  - Basics of JavaScript and React Native Cross-Platform)
- **Building Your First Mobile App**
  - Creating a Simple App (e.g., a To-Do List)
  - User Interface Components
  - Handling User Input and Navigation
- **Advanced Mobile App Features**
  - Data Storage and Retrieval
  - Working with APIs and Web Services
  - Integrating Device Features Camera, Location, etc.)
- **Testing and Debugging**
  - Debugging Tools and Techniques
  - Testing on Different Devices and Screen Sizes
  - User Testing and Feedback
- **Deployment and App Stores**
  - App Distribution for iOS App Store)
  - App Distribution for Android Google Play)
  - App Store Optimization ASO

Exam methodology **Written Assessment**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 3 | Semester 1

Bitcoin & Blockchain — 6 ECTS

Program

- **Introduction to Blockchain Technology**
  - What is Blockchain?
  - How Does Blockchain Work?
  - Types of Blockchains Public vs. Private)
  - Consensus Mechanisms Proof of Work, Proof of Stake, etc.)
- **Introduction to Bitcoin**
  - The Genesis of Bitcoin
  - Cryptography in Bitcoin
  - Bitcoin Transactions and Addresses
  - Bitcoin Mining and Security
- **Bitcoin Economics**
  - Monetary Policy of Bitcoin
  - Bitcoin as Digital Gold
  - Trading and Investment in Bitcoin
  - Regulatory and Legal Aspects
- **Bitcoin: Ethical, Environmental, and Social Considerations**
  - Environmental Impacts of Bitcoin Mining
  - Ethical and Social Implications
  - Bitcoin and Financial Inclusion
  - Case Studies
- **Scaling Solutions and Lightning Network**
  - Scalability Challenges in Bitcoin
  - Introduction to Lightning Network
  - How Lightning Network Works
  - Lightning Network Use Cases
- **Module 6 Setting Up and Using Lightning Network**
  - Setting Up a Lightning Node
  - Conducting Lightning Transactions
  - Lightning Network Applications
  - Security and Privacy Considerations
- **Real-World Applications and Future Developments**
  - Lightning Network in E-commerce and Microtransactions
  - Cross-Border Payments with Lightning
  - Research and Development in Blockchain and Lightning
  - Regulatory and Policy Updates

Exam methodology **Written Assessment**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 3 | Semester 1

Web3 — 6 ECTS

Program

- **Introduction to Web3**
  - Understanding Web3 and Its Evolution
  - Significance of Decentralization
  - Web2 vs. Web3 A Comparative Overview
- **Blockchain Fundamentals**
  - Blockchain Technology Overview
  - Cryptocurrencies and Tokens
  - Decentralization and Consensus Mechanisms
  - Smart Contracts and Ethereum
- **Decentralized Applications (dApps)**
  - What are dApps?
  - Building dApps on Ethereum and Other Platforms
  - Solidity and Smart Contracts
  - dApp Development Tools and Frameworks
  - Use Cases and Examples
- **Decentralized Finance DeFi**
  - Introduction to DeFi
  - DeFi Protocols: Decentralized Exchanges, Lending, Staking, etc.
  - Yield Farming and Liquidity Provision
  - Risks and Security in DeFi
- **Web3 Wallets and Identity**
  - Web3 Wallets and Their Role
  - Self-Sovereign Identity SSI
  - Managing Digital Identity on the Decentralized Web
- **Real-World Applications and Projects**
  - Case Studies of Web3 Projects
  - Exploring NFTs Non-Fungible Tokens)
  - Web3Based Social Networks and Content Platforms
- **Web3 and the Future**
  - Emerging Technologies in Web3
  - Governance and Decentralized Autonomous Organizations DAOs
  - Career Opportunities in Web3

Exam methodology **Written Assessment**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 3 | Semester 1

Data Analysis — 6 ECTS

Program

- **Introduction to Data Analysis**
  - What is Data Analysis?
  - Role of Data Analysis in Decision-Making
  - Overview of Excel and Python for Data Analysis
- **Data Preparation and Excel Basics**
  - Data Import and Formatting in Excel
  - Data Cleaning and Preprocessing
  - Basic Excel Functions and Formulas
- **Exploratory Data Analysis in Excel**
  - Descriptive Statistics in Excel
  - Data Visualization with Excel Charts
  - PivotTables for Data Exploration
- **Advanced Excel for Data Analysis**
  - Advanced Excel Functions (e.g., VLOOKUP, IF, SUMIF)
  - Creating Interactive Dashboards in Excel
  - Solver and Goal Seek for Optimization
- **Introduction to Python for Data Analysis**
  - Setting Up Python and Jupyter Notebook
  - Basic Python Data Structures Lists, Dictionaries)
  - Navigating Jupyter Notebooks
- **Data Manipulation with Python**
  - Introduction to Pandas Library
  - Data Cleaning and Transformation with Pandas
  - Combining and Reshaping DataFrames
- **Data Visualization with Python**
  - Matplotlib for Basic Visualization
  - Seaborn for Advanced Visualization
  - Creating Custom Plots and Visualizations
- **Statistical Analysis with Python**
  - Hypothesis Testing with Scipy
  - Correlation and Regression Analysis
  - Exploring Datasets with Python
- **Real-World Data Analysis Projects**
  - Analyzing Real Datasets
  - Presenting Data Insights

Exam methodology **Written Assessment**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 3 | Semester 1

Introduction to Deep Learning & NLP — 6 ECTS

Program

- Fundamentals of Deep Learning
- Neural Networks and Architectures
- Word Embeddings and Language Representations
- Recurrent Neural Networks and Long Short-Term Memory LSTM
- Attention Mechanisms and Transformers
- Text Classification and Sentiment Analysis
- Sequence-to-Sequence Models and Machine Translation

Learning outcomes

Competences

- Collaborate to develop and refine NLP models.
- Manage project timelines and deliverables for deep learning projects.
- Ensure compliance with data privacy standards.

Knowledge

- Identify key components of neural networks and deep learning frameworks.
- Describe the process of training and evaluating deep learning models for NLP tasks.
- List various types of word embeddings and their applications in NLP.
- Identify the best model or approach to be used in a specific scenario.

Skills

- Apply deep learning algorithms to solve natural language processing problems.
- Operate popular libraries such as TensorFlow or PyTorch.
- Design and implement neural network architectures tailored to specific NLP tasks.

Exam methodology

Written Assessment

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 3 | Semester 1

Induction to Large Language Models — 6 ECTS

Program

- Architecture of Large Language Models
- Training Techniques and Optimization
- Datasets and Data Preprocessing for LLMs
- Applications and Use Cases of LLMs
- Evaluation and Performance Metrics
- State-of-art solutions and integration in software

Learning outcomes

Competences

- Work effectively in teams to design, develop, and evaluate large language models and their applications.
- Create comprehensive project plans for the implementation of LLM-based solutions in various domains.

Knowledge

- Describe the architecture and components of large language models.
- Identify the key challenges and limitations associated with LLMs.
- List various applications and software vendors of large language models in different industries

Skills

- Apply principles of NLP to preprocess and prepare data for training large language models.
- Demonstrate the ability to fine-tune pre-trained LLMs for specific tasks.
- Use LLMs in tandem with other software solutions.
- Write specific prompts using the most appropriate prompt strategy

Exam methodology

Written Assessment

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 3 | Semester 1

Marketing Technologies — 6 ECTS

Program

- Techniques and tools for creating and optimizing digital marketing campaigns.
- Methods for analyzing and interpreting marketing data to inform decision-making.
- Utilization of automation platforms to enhance campaign efficiency and effectiveness.
- Systems and strategies for managing and improving customer interactions and loyalty.

Learning outcomes

Competences

- Implement automated marketing campaigns using CRM software to enhance customer engagement.
- Analyze digital marketing metrics through analytics tools to optimize campaign performance.
- Integrate various digital marketing platforms to create cohesive multi-channel marketing strategies.
- Develop and manage content using content management systems CMS for targeted digital marketing efforts.

Knowledge

- Develop proficiency in tracking and analyzing website traffic and user behavior using web analytics tools.
- Implement marketing automation to personalize and optimize email campaigns.
- Utilize customer relationship management systems to manage and enhance customer interactions and sales processes.
- Apply advanced data analysis and predictive modeling techniques to marketing data.
- Integrate social media management to tools to schedule, monitor, and analyze social media campaigns.

Exam methodology

Written Assessment

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 3 | Semester 1

Project Management and Quality Assurance 6 ECTS

Program

- Introduction to Software Project Management
- Project Initiation and Requirements Gathering
- Scope and Resource Management
- Time, Cost, and Quality Metrics
- Introduction to Software Quality Assurance
- Software Risk Management
- Team Dynamics in Software Development
- Source Code and Version Control
- Software Testing and QA
- Quality Assurance Standards and Frameworks
- Agile and Scrum in Software Projects
- Monitoring and Reporting in Software Projects
- User Experience UX) and Quality Assurance
- DevOps, CI/CD, and Quality Assurance
- Case Study and Course Recap

Exam methodology **Written Assessment**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 3 | Semester 1

Introduction to Cyber Security — 6 ECTS

Program

- **Introduction to Cyber Security**
  - Overview of cyber threats and vulnerabilities
  - Importance of cybersecurity in modern society
  - Cybersecurity principles, goals, and challenges
- **Information Security Basics**
  - Confidentiality, integrity, and availability (CIA) triad
  - Security policies, standards, and best practices
  - Risk management and threat assessment
  - Security frameworks and compliance (e.g., ISO 27001, NIST)
- **Network Security**
  - Network security fundamentals
  - Firewalls, intrusion detection systems IDS, and intrusion prevention systems IPS
  - Virtual private networks VPNs and secure remote access
  - Wireless network security
- **Cryptography and Data Protection**
  - Basics of cryptography: symmetric and asymmetric encryption, hashing
  - Digital signatures and certificates
  - Key management and public key infrastructure PKI
  - Data protection and encryption techniques
- **Web Application Security**
  - Common web vulnerabilities (e.g., SQL injection, cross-site scripting)
  - Web application firewalls WAF) and secure coding practices
  - Session management and authentication
  - Secure software development life cycle SDLC
- **Malware and Endpoint Security**
  - Types of malware (e.g., viruses, worms, ransomware)
  - Antivirus software and endpoint protection
  - Host-based intrusion detection and prevention systems HIDS/HIPS
- **Incident Response and Forensics**
  - Incident response process and procedures
  - Handling and analyzing security incidents
  - Digital forensics techniques and evidence preservation

Exam methodology **Written Assessment**

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

Computer Engineering & Artificial Intelligence

Bachelor in Computer Engineering & Artificial Intelligence

Year 3 | Semester 1

AWS Cloud Practitioner — 6 ECTS

Program

- Introduction to Cloud Computing and AWS
- AWS Global Infrastructure
- Compute Services
- Storage Services
- Networking & CDN
- Databases
- Security and Identity
- Management & Governance Tools
- Migration & Transfer Services
- AWS Cost Management
- AWS Well-Architected Framework
- WS Support Plans
- AWS Security & Compliance
- Exam Preparation & Mock tests

Exam methodology **Written Assessment**

Year 3 | Semester 2

Final dissertation — 24 ECTS

I contenuti dei corsi potranno subire modifiche, integrazioni o aggiornamenti in base alle richieste di mercato o alla micro-progettazione del docente.

EPICODE
Institute of Technology

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NB. Il programma potrebbe essere soggetto a variazioni.
Durante lo svolgimento del corso il calendario didattico definitivo sarà disponibile nella piattaforma dedicata di EPICODE.