

Computer Science - Computer Science (LM-18) from academic year 2023-2024

Recommended Completion Plans

The completion plans are intended to provide students with a clearer view of the areas of computer science in which they can specialize and to direct them toward the compilation of a culturally valid (and therefore automatically accepted) study plan ('percorso formativo'), without prejudice to the possibility of composing an individual study plan that will be evaluated by the Study Plan Committee.

CAD Dec. 21, 2022, effective A.Y. 2023/24, resolved: Curricula are removed and Recommended Completion Pathways (hereafter briefly referred to as RCPs) are proposed, which are (in alphabetical order):

- Algorithms
- Artificial Intelligence
- Computational Models for Systems Design
- Data Science
- Multimedia Computing and Interaction
- Networks
- Security
- Software Engineering
- Systems

In **ANNEX 1** you will find the *characterizing* teachings for each RCP.

In **ANNEX 2** you will find the *related* teachings, which are common to all RCPs.

Please note that, according to the current order, students have to present a study plan composed as follows:

- 9 *characterizing* teachings, amounting to 54 CFUs
- 2 *related* teachings, amounting to 12 CFUs
- 2 *elective* teachings, amounting to 12 CFUs
- 1 AFC, amounting to 6 CFU
- Master's thesis, amounting to 36 CFU

Students are **encouraged** to compose a **SUGGESTED STUDY PLAN** as follows:

- Students choose **two RCPs** according to their interests by merging the characterizing teachings (see **ANNEX 3**)

- Students add related and elective teachings **exclusively** from **ANNEX 2** and an AFC to complete their study plan
- **Students will write in the Notes of the Study Plan Form the sentence “SUGGESTED STUDY PLAN”, specifying the chosen RCPs.**

Such study plans will be **approved automatically**.

If students are not satisfied with a study plan so constructed, they may operate according to one of the following two options:

1. PARTIALLY SUGGESTED STUDY PLAN:

- Students choose a single RCP (its characterizing teachings amount to strictly less than 54 CFU),
- Students complete the 54 CFU of characterizing teachings choosing teachings from **ANNEX 2**,
- Students add related and elective teachings **exclusively** from **ANNEX 2** and an AFC to complete their study plan
- **Students will write in the Notes of the Study Plan Form the sentence “PARTIALLY SUGGESTED STUDY PLAN”, specifying the chosen RCP.**

Such study plans will have to be reviewed by the Study Plan Committee and **will not necessarily be approved**.

2. INDIVIDUAL STUDY PLAN:

- Students choose characterizing teachings amounting to 54 CFU from **ANNEX 1**,
- Students choose related teachings amounting to 12 CFU from **ANNEX 2**, elective teachings amounting to 12 CFU and one AFC.
- **Students will write in the Notes of the Study Plan Form the sentence “INDIVIDUAL STUDY PLAN”, explaining why they decided not to use any RCP.**

Such study plans will have to be reviewed by the Study Plan Committee and **will not necessarily be approved**.

ANNEX 1 - RCPs

Below are the characterizing teachings of the proposed RCPs. In parentheses, the number of CFUs of their characterizing teachings.

Algorithms (30 CFU)

ADVANCED ALGORITHMS
COMPUTATIONAL COMPLEXITY
CRYPTOGRAPHY
GRAPH THEORY
NETWORK ALGORITHMS

Artificial Intelligence (36 CFU)

ADVANCED MACHINE LEARNING
BIG DATA COMPUTING
COMPUTER VISION
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
NATURAL LANGUAGE PROCESSING

Computational Models for Systems Design (30 CFU)

AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
CONCURRENT SYSTEMS
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
MATHEMATICAL LOGIC FOR COMPUTER SCIENCE
MODELS OF COMPUTATION

Data Science (30 CFU)

ADVANCED MACHINE LEARNING
BIG DATA COMPUTING
CLOUD COMPUTING
DATA AND NETWORK SECURITY
FOUNDATIONS OF DATA SCIENCE

Multimedia Computing and Interaction (48 CFU)

ADVANCED MACHINE LEARNING
ADVANCED SOFTWARE ENGINEERING
BIOMETRIC SYSTEMS
COMPUTER VISION
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
HUMAN-COMPUTER INTERACTION ON THE WEB
MULTIMODAL INTERACTION
NATURAL LANGUAGE PROCESSING

Networks (24 CFU)

AUTONOMOUS NETWORKING
COMPUTER NETWORK PERFORMANCE
INTERNET OF THINGS
NETWORK ALGORITHMS

Security (36 CFU)

BIOMETRIC SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
CRYPTOGRAPHY
DATA AND NETWORK SECURITY
PRACTICAL NETWORK DEFENSE
SECURITY IN SOFTWARE APPLICATIONS

Software Engineering (48 CFU)

ADVANCED ALGORITHMS
ADVANCED SOFTWARE ENGINEERING
AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
CONCURRENT SYSTEMS
DISTRIBUTED SYSTEMS
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
SECURITY IN SOFTWARE APPLICATIONS

Systems (24 CFU)

ADVANCED ARCHITECTURES
CLOUD COMPUTING
CONCURRENT SYSTEMS
DISTRIBUTED SYSTEMS

ANNEX 2 – Related Teachings

ADVANCED ALGORITHMS
ADVANCED ARCHITECTURES
ADVANCED MACHINE LEARNING
ADVANCED SOFTWARE ENGINEERING
AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
AUTONOMOUS NETWORKING
BIG DATA COMPUTING
BIOMETRIC SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
CLOUD COMPUTING
COMPUTATIONAL COMPLEXITY
COMPUTER NETWORK PERFORMANCE
COMPUTER VISION
CONCURRENT SYSTEMS
CRYPTOGRAPHY
DATA AND NETWORK SECURITY
DATA-DRIVEN MODELING OF COMPLEX SYSTEMS
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
DISTRIBUTED SYSTEMS
ETHICAL HACKING
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
FOUNDATIONS OF DATA SCIENCE *
GRAPH THEORY
HUMAN-COMPUTER INTERACTION ON THE WEB
INTERNET OF THINGS
MACHINE LEARNING *
MATHEMATICAL LOGIC FOR COMPUTER SCIENCE
METHODS IN COMPUTER SCIENCE EDUCATION: ANALYSIS
METHODS IN COMPUTER SCIENCE EDUCATION: DESIGN
MODELS OF COMPUTATION
MULTIMODAL INTERACTION
NATURAL LANGUAGE PROCESSING
NETWORK ALGORITHMS
PRACTICAL NETWORK DEFENSE
SECURITY IN SOFTWARE APPLICATIONS
TOPICS IN PHYSICS

* Machine Learning e Foundations of Data Science non possono apparire nello stesso piano di completamento.

ANNEX 3 – List of the characterizing teachings for each pair of RCPs (for automatic approval)

Algorithms + Artificial Intelligence (66 CFU)

ADVANCED ALGORITHMS
ADVANCED MACHINE LEARNING
BIG DATA COMPUTING
COMPUTER VISION
COMPUTATIONAL COMPLEXITY
CRYPTOGRAPHY
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
GRAPH THEORY
NATURAL LANGUAGE PROCESSING
NETWORK ALGORITHMS
+ choose related teachings amounting to 12 CFU + an AFC

Algorithms + Computational Models for Systems Design (60 CFU)

ADVANCED ALGORITHMS
AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
COMPUTATIONAL COMPLEXITY
CONCURRENT SYSTEMS
CRYPTOGRAPHY
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
GRAPH THEORY
MATHEMATICAL LOGIC FOR COMPUTER SCIENCE
MODELS OF COMPUTATION
NETWORK ALGORITHMS
+ choose related teachings amounting to 18 CFU + an AFC

Algorithms + Data Science (60 CFU)

ADVANCED ALGORITHMS
ADVANCED MACHINE LEARNING
BIG DATA COMPUTING
COMPUTATIONAL COMPLEXITY
CLOUD COMPUTING
CRYPTOGRAPHY
DATA AND NETWORK SECURITY
FOUNDATIONS OF DATA SCIENCE
GRAPH THEORY
NETWORK ALGORITHMS
+ choose related teachings amounting to 18 CFU + an AFC

Algorithms + Multimedia Computing and Interaction (78 CFU)

ADVANCED ALGORITHMS
ADVANCED MACHINE LEARNING
ADVANCED SOFTWARE ENGINEERING
BIOMETRIC SYSTEMS
COMPUTATIONAL COMPLEXITY
COMPUTER VISION
CRYPTOGRAPHY
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
GRAPH THEORY
HUMAN-COMPUTER INTERACTION ON THE WEB
MULTIMODAL INTERACTION
NATURAL LANGUAGE PROCESSING
NETWORK ALGORITHMS
+ choose an AFC

Algorithms + Networks (48 CFU)

ADVANCED ALGORITHMS
AUTONOMOUS NETWORKING
COMPUTATIONAL COMPLEXITY
COMPUTER NETWORK PERFORMANCE
CRYPTOGRAPHY
GRAPH THEORY
INTERNET OF THINGS
NETWORK ALGORITHMS
+ choose related teachings amounting to 30 CFU + an AFC

Algorithms + Security (60 CFU)

ADVANCED ALGORITHMS
BIOMETRIC SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
COMPUTATIONAL COMPLEXITY
CRYPTOGRAPHY
DATA AND NETWORK SECURITY
GRAPH THEORY
NETWORK ALGORITHMS
PRACTICAL NETWORK DEFENSE
SECURITY IN SOFTWARE APPLICATIONS
+ choose related teachings amounting to 18 CFU + an AFC

Algorithms + Software Engineering (72 CFU)

ADVANCED ALGORITHMS
ADVANCED SOFTWARE ENGINEERING
AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
COMPUTATIONAL COMPLEXITY
CONCURRENT SYSTEMS
CRYPTOGRAPHY
DISTRIBUTED SYSTEMS
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
GRAPH THEORY
NETWORK ALGORITHMS
SECURITY IN SOFTWARE APPLICATIONS
+ choose related teachings amounting to 6 CFU + an AFC

Algorithms + Systems (54 CFU)

ADVANCED ALGORITHMS
ADVANCED ARCHITECTURES
CLOUD COMPUTING
COMPUTATIONAL COMPLEXITY
CONCURRENT SYSTEMS
CRYPTOGRAPHY
DISTRIBUTED SYSTEMS
GRAPH THEORY
NETWORK ALGORITHMS
+ choose related teachings amounting to 24 CFU + an AFC

Artificial Intelligence + Computational Models for Systems Design (60 CFU)

ADVANCED MACHINE LEARNING
AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
BIG DATA COMPUTING
COMPUTER VISION
CONCURRENT SYSTEMS
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
MATHEMATICAL LOGIC FOR COMPUTER SCIENCE
MODELS OF COMPUTATION
NATURAL LANGUAGE PROCESSING
+ choose related teachings amounting to 18 CFU + an AFC

Artificial Intelligence + Data Science (54 CFU)

ADVANCED MACHINE LEARNING
BIG DATA COMPUTING
CLOUD COMPUTING
COMPUTER VISION
DATA AND NETWORK SECURITY
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
FOUNDATIONS OF DATA SCIENCE
NATURAL LANGUAGE PROCESSING
+ choose related teachings amounting to 24 CFU + an AFC

Artificial Intelligence + Multimedia Computing and Interaction (60 CFU)

ADVANCED MACHINE LEARNING
ADVANCED SOFTWARE ENGINEERING
BIG DATA COMPUTING
BIOMETRIC SYSTEMS
COMPUTER VISION
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
HUMAN-COMPUTER INTERACTION ON THE WEB
MULTIMODAL INTERACTION
NATURAL LANGUAGE PROCESSING
+ choose related teachings amounting to 18 CFU + an AFC

Artificial Intelligence + Networks (60 CFU)

ADVANCED MACHINE LEARNING
AUTONOMOUS NETWORKING
BIG DATA COMPUTING
COMPUTER NETWORK PERFORMANCE
COMPUTER VISION
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
INTERNET OF THINGS
NATURAL LANGUAGE PROCESSING
NETWORK ALGORITHMS
+ choose related teachings amounting to 18 CFU + an AFC

Artificial Intelligence + Security (72 CFU)

ADVANCED MACHINE LEARNING
BIG DATA COMPUTING
BIOMETRIC SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
COMPUTER VISION
CRYPTOGRAPHY
DATA AND NETWORK SECURITY
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
NATURAL LANGUAGE PROCESSING
PRACTICAL NETWORK DEFENSE
SECURITY IN SOFTWARE APPLICATIONS
+ choose related teachings amounting to 6 CFU + an AFC

Artificial Intelligence + Software Engineering (78 CFU)

ADVANCED ALGORITHMS
ADVANCED MACHINE LEARNING
ADVANCED SOFTWARE ENGINEERING
AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
BIG DATA COMPUTING
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
COMPUTER VISION
CONCURRENT SYSTEMS
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
DISTRIBUTED SYSTEMS
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
NATURAL LANGUAGE PROCESSING
SECURITY IN SOFTWARE APPLICATIONS
+ choose an AFC

Artificial Intelligence + Systems (60 CFU)

ADVANCED ARCHITECTURES
ADVANCED MACHINE LEARNING
BIG DATA COMPUTING
COMPUTER VISION
CLOUD COMPUTING
CONCURRENT SYSTEMS
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
DISTRIBUTED SYSTEMS
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
NATURAL LANGUAGE PROCESSING
+ choose related teachings amounting to 18 CFU + an AFC

Computational Models for Systems Design + Data Science (60 CFU)

ADVANCED MACHINE LEARNING
AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
BIG DATA COMPUTING
CLOUD COMPUTING
CONCURRENT SYSTEMS
DATA AND NETWORK SECURITY
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
FOUNDATIONS OF DATA SCIENCE
MATHEMATICAL LOGIC FOR COMPUTER SCIENCE
MODELS OF COMPUTATION
+ choose related teachings amounting to 18 CFU + an AFC

Computational Models for Systems Design + Multimedia Computing and Interaction (78 CFU)

ADVANCED MACHINE LEARNING
ADVANCED SOFTWARE ENGINEERING
AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
BIOMETRIC SYSTEMS
COMPUTER VISION
CONCURRENT SYSTEMS
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
HUMAN-COMPUTER INTERACTION ON THE WEB
MATHEMATICAL LOGIC FOR COMPUTER SCIENCE
MODELS OF COMPUTATION
MULTIMODAL INTERACTION
NATURAL LANGUAGE PROCESSING
+ choose an AFC

Computational Models for Systems Design + Networks (54 CFU)

AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
AUTONOMOUS NETWORKING
COMPUTER NETWORK PERFORMANCE
CONCURRENT SYSTEMS
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
INTERNET OF THINGS
MATHEMATICAL LOGIC FOR COMPUTER SCIENCE
MODELS OF COMPUTATION
NETWORK ALGORITHMS
+ choose related teachings amounting to 24 CFU + an AFC

Computational Models for Systems Design + Security (66 CFU)

AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
BIOMETRIC SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
CONCURRENT SYSTEMS
CRYPTOGRAPHY
DATA AND NETWORK SECURITY
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
MATHEMATICAL LOGIC FOR COMPUTER SCIENCE
MODELS OF COMPUTATION
PRACTICAL NETWORK DEFENSE
SECURITY IN SOFTWARE APPLICATIONS
+ choose related teachings amounting to 12 CFU + an AFC

Computational Models for Systems Design + Software Engineering (60 CFU)

ADVANCED ALGORITHMS
ADVANCED SOFTWARE ENGINEERING
AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
CONCURRENT SYSTEMS
DISTRIBUTED SYSTEMS
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
MATHEMATICAL LOGIC FOR COMPUTER SCIENCE
MODELS OF COMPUTATION
SECURITY IN SOFTWARE APPLICATIONS
+ choose related teachings amounting to 18 CFU + an AFC

Computational Models for Systems Design + Systems (48 CFU)

ADVANCED ARCHITECTURES
AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
CLOUD COMPUTING
CONCURRENT SYSTEMS
DISTRIBUTED SYSTEMS
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
MATHEMATICAL LOGIC FOR COMPUTER SCIENCE
MODELS OF COMPUTATION
+ choose related teachings amounting to 30 CFU + an AFC

Data Science + Multimedia Computing and Interaction (72 CFU)

ADVANCED MACHINE LEARNING
ADVANCED SOFTWARE ENGINEERING
BIG DATA COMPUTING
BIOMETRIC SYSTEMS
CLOUD COMPUTING
COMPUTER VISION
DATA AND NETWORK SECURITY
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
FOUNDATIONS OF DATA SCIENCE
HUMAN-COMPUTER INTERACTION ON THE WEB
MULTIMODAL INTERACTION
NATURAL LANGUAGE PROCESSING
+ choose related teachings amounting to 6 CFU + an AFC

Data Science + Networks (54 CFU)

ADVANCED MACHINE LEARNING
AUTONOMOUS NETWORKING
BIG DATA COMPUTING
CLOUD COMPUTING
COMPUTER NETWORK PERFORMANCE
DATA AND NETWORK SECURITY
FOUNDATIONS OF DATA SCIENCE
INTERNET OF THINGS
NETWORK ALGORITHMS
+ choose related teachings amounting to 24 CFU + an AFC

Data Science + Security (60 CFU)

ADVANCED MACHINE LEARNING
BIG DATA COMPUTING
BIOMETRIC SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
CLOUD COMPUTING
CRYPTOGRAPHY
DATA AND NETWORK SECURITY
FOUNDATIONS OF DATA SCIENCE
PRACTICAL NETWORK DEFENSE
SECURITY IN SOFTWARE APPLICATIONS
+ choose related teachings amounting to 18 CFU + an AFC

Data Science + Software Engineering (78 CFU)

ADVANCED ALGORITHMS
ADVANCED MACHINE LEARNING
ADVANCED SOFTWARE ENGINEERING
AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
BIG DATA COMPUTING
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
CLOUD COMPUTING
CONCURRENT SYSTEMS
DATA AND NETWORK SECURITY
DISTRIBUTED SYSTEMS
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
FOUNDATIONS OF DATA SCIENCE
SECURITY IN SOFTWARE APPLICATIONS
+ choose an AFC

Data Science + Systems (48 CFU)

ADVANCED ARCHITECTURES
ADVANCED MACHINE LEARNING
BIG DATA COMPUTING
CLOUD COMPUTING
CONCURRENT SYSTEMS
DATA AND NETWORK SECURITY
DISTRIBUTED SYSTEMS
FOUNDATIONS OF DATA SCIENCE
+ choose related teachings amounting to 30 CFU + an AFC

Multimedia Computing and Interaction + Networks (72 CFU)

ADVANCED MACHINE LEARNING
ADVANCED SOFTWARE ENGINEERING
AUTONOMOUS NETWORKING
BIOMETRIC SYSTEMS
COMPUTER NETWORK PERFORMANCE
COMPUTER VISION
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
HUMAN-COMPUTER INTERACTION ON THE WEB
INTERNET OF THINGS
MULTIMODAL INTERACTION
NATURAL LANGUAGE PROCESSING
NETWORK ALGORITHMS
+ choose related teachings amounting to 6 CFU + an AFC

Multimedia Computing and Interaction + Security (78 CFU)

ADVANCED MACHINE LEARNING
ADVANCED SOFTWARE ENGINEERING
BIOMETRIC SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
COMPUTER VISION
CRYPTOGRAPHY
DATA AND NETWORK SECURITY
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
HUMAN-COMPUTER INTERACTION ON THE WEB
MULTIMODAL INTERACTION
NATURAL LANGUAGE PROCESSING
PRACTICAL NETWORK DEFENSE
SECURITY IN SOFTWARE APPLICATIONS
+ choose an AFC

Multimedia Computing and Interaction + Software Engineering (90 CFU)

ADVANCED ALGORITHMS
ADVANCED MACHINE LEARNING
ADVANCED SOFTWARE ENGINEERING
AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
BIOMETRIC SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
COMPUTER VISION
CONCURRENT SYSTEMS
DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE
DISTRIBUTED SYSTEMS
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
HUMAN-COMPUTER INTERACTION ON THE WEB
MULTIMODAL INTERACTION
NATURAL LANGUAGE PROCESSING
SECURITY IN SOFTWARE APPLICATIONS
+ eliminate two teachings in the previous list + choose an AFC

Multimedia Computing and Interaction + Systems (72 CFU)

ADVANCED ARCHITECTURES

ADVANCED MACHINE LEARNING

ADVANCED SOFTWARE ENGINEERING

BIOMETRIC SYSTEMS

COMPUTER VISION

CLOUD COMPUTING

CONCURRENT SYSTEMS

DEEP LEARNING AND APPLIED ARTIFICIAL INTELLIGENCE

DISTRIBUTED SYSTEMS

HUMAN-COMPUTER INTERACTION ON THE WEB

MULTIMODAL INTERACTION

NATURAL LANGUAGE PROCESSING

Rimangono da scegliere 6 CFU nella tabella degli insegnamenti affini ed una AFC.

Networks + Security (60 CFU)

AUTONOMOUS NETWORKING
BIOMETRIC SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
COMPUTER NETWORK PERFORMANCE
CRYPTOGRAPHY
DATA AND NETWORK SECURITY
INTERNET OF THINGS
NETWORK ALGORITHMS
PRACTICAL NETWORK DEFENSE
SECURITY IN SOFTWARE APPLICATIONS

Rimangono da scegliere 18 CFU nella tabella degli insegnamenti affini ed una AFC.

Networks + Software Engineering (72 CFU)

ADVANCED ALGORITHMS
ADVANCED SOFTWARE ENGINEERING
AUTONOMOUS NETWORKING
AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
COMPUTER NETWORK PERFORMANCE
CONCURRENT SYSTEMS
DISTRIBUTED SYSTEMS
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
INTERNET OF THINGS
NETWORK ALGORITHMS
SECURITY IN SOFTWARE APPLICATIONS

Rimangono da scegliere 6 CFU nella tabella degli insegnamenti affini ed una AFC.

Networks + Systems (48 CFU)

AUTONOMOUS NETWORKING
ADVANCED ARCHITECTURES
CLOUD COMPUTING
COMPUTER NETWORK PERFORMANCE
CONCURRENT SYSTEMS
DISTRIBUTED SYSTEMS
INTERNET OF THINGS
NETWORK ALGORITHMS

Rimangono da scegliere 30 CFU nella tabella degli insegnamenti affini ed una AFC.

Security + Software Engineering (72 CFU)

ADVANCED ALGORITHMS
ADVANCED SOFTWARE ENGINEERING
AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
BIOMETRIC SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
CONCURRENT SYSTEMS
CRYPTOGRAPHY
DATA AND NETWORK SECURITY
DISTRIBUTED SYSTEMS
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
PRACTICAL NETWORK DEFENSE
SECURITY IN SOFTWARE APPLICATIONS

Rimangono da scegliere 6 CFU nella tabella degli insegnamenti affini ed una AFC.

Security + Systems (60 CFU)

ADVANCED ARCHITECTURES
BIOMETRIC SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
CLOUD COMPUTING
CONCURRENT SYSTEMS
CRYPTOGRAPHY
DATA AND NETWORK SECURITY
DISTRIBUTED SYSTEMS
PRACTICAL NETWORK DEFENSE
SECURITY IN SOFTWARE APPLICATIONS

Rimangono da scegliere 18 CFU nella tabella degli insegnamenti affini ed una AFC.

Software Engineering + Systems (60 CFU)

ADVANCED ALGORITHMS
ADVANCED ARCHITECTURES
ADVANCED SOFTWARE ENGINEERING
AUTOMATIC VERIFICATION OF INTELLIGENT SYSTEMS
BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES
CLOUD COMPUTING
CONCURRENT SYSTEMS
DISTRIBUTED SYSTEMS
FORMAL METHODS FOR AI-BASED SYSTEMS ENGINEERING
SECURITY IN SOFTWARE APPLICATIONS

Rimangono da scegliere 18 CFU nella tabella degli insegnamenti affini ed una AFC.