

COMPUTATION
& NON
PDR
PLS

MAJORS

Sets of 5 courses within a specific area of computer science.

IA

ARTIFICIAL INTELLIGENCE

Artificial intelligence
Machine learning
Deep learning
Vision and cognitive systems
Natural language processing

IMS

INTERNET, MOBILE AND SECURITY

Wireless networks for mobile applications
Mobile programming and multimedia
Web information management
Runtimes for concurrency and distribution
Advanced topics in computer and network security

PLS

PROGRAMMING LANGUAGES, SYSTEMS AND ALGORITHMS

Functional languages
Languages for concurrency and distribution
Software verification
Formal methods for cyberphysical systems
Selected topics in algorithms

OTHER ELECTIVE COURSES

Courses in related fields with a natural connection with Majors and Minors.

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graph TD
    IA[IA] --- IMS[IMS]
    IA --- PLS[PLS]
    IMS --- ITES[ITES]
    IMS --- DM[DM]
    PLS --- INN[INN]
    ITES --- CRYPTO[CRYPTOGRAPHY]
    DM --- MATH[MATHEMATICAL MODELING FOR COMPUTATIONAL OPTIMIZATION]
    INN --- STRUCT[STRUCTURAL BIOINFORMATICS]
    CRYPTO --- TERMINAL[TERMINAL DELIVERY]
    MATH --- CRYPTO
    STRUCT --- CRYPTO
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A study plan must meet the following requirements.

- The total number of credits must be 120 ECTS or more, including 33 ECTS for the master's project
- It has to include
 - the following mandatory courses:
 - Computability (6 ECTS)
 - Advanced Algorithms (6 ECTS)
 - Economics and Management of Innovation (6 ECTS)
 - the B2 English language qualification, productive skills (5 ECTS)
 - at least one course (6 ECTS) in the group "Other elective courses" (see above)
 - free choice courses for a total of 12 ECTS (typically two "Other elective courses", these can be chosen among the course units of all the Master's degrees of the University of Padua, including the Master's degree in Computer science).

A study plan is automatically approved when it includes a **Major**, i.e., it includes at least 4 course units from the groups IA, IMS and PLS (see above). The remaining 3 course units in computer science can be freely chosen between Majors and Minors. Plans that do not include a Major needs to be discussed with a member of the Mentoring Committee before being presented.

MINORS

Sets of 3 courses that focus on a specific topic in computer science.

ITES

INTERNET OF THINGS AND EMBEDDED SYSTEMS

Mobile security
Real-time kernels and systems
Cyberphysical systems and ICT security

DM

DATA AND PROCESS MANAGEMENT

Big data computing
Process mining
Knowledge representation and reasoning

INN

INNOVATION AND ENTREPRENEURSHIP IN ICT

IT service management
Start-up in ICT
Security and risk management and certifications

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