

BACHELOR ENGINEERING PROGRAM IN DATA ENGINEERING AND SYSTEMS (CODE 59ID)

ACADEMIC YEAR 2022-2023

FIRST YEAR

| CODE | COURSES | ECTS | TYPE | SEMESTER | DEPARTMENT CODE |
|-----------|--|------|------|-----------------|-----------------|
| 595000500 | ALGEBRA | 6 | Elem | 1 st | D540 |
| 595000501 | CALCULUS | 6 | Elem | 1 st | D540 |
| 595000502 | FUNDAMENTALS OF DATA PROCESSING | 6 | Elem | 1 st | D230 |
| 595000503 | PROGRAMMING | 6 | Elem | 1 st | D230 |
| 595000504 | DEVELOPMENT OF PROFESSIONAL SKILLS | 3 | Comp | 1 st | D250/D240 |
| 595000505 | INTRODUCTION TO DATA ENGINEERING | 3 | Comp | 1 st | D510/D230/240 |
| 595000506 | RELATIONAL DATABASES AND STRUCTURED DATA | 6 | Comp | 2 nd | D230 |
| 595000507 | MATHEMATICAL MODELS AND DISCRETE MATHEMATICS | 6 | Elem | 2 nd | D540 |
| 595000508 | OPTIMIZATION | 6 | Elem | 2 nd | D540 |
| 595000509 | SIGNALS AND SYSTEMS | 6 | Elem | 2 nd | D250 |
| 595000510 | DATA ACQUISITION SYSTEMS | 6 | Comp | 2 nd | D230 |

SECOND YEAR

| CODE | COURSES | ECTS | TYPE | SEMESTER | DEPARTMENT CODE |
|-----------|--|------|------|-----------------|-----------------|
| 595000511 | NON-RELATIONAL AND DISTRIBUTED DATABASES | 6 | Comp | 3 rd | D230 |
| 595000512 | ENGLISH FOR PROFESSIONAL AND ACADEMIC COMMUNICATIONS | 6 | Comp | 3 rd | D240 |
| 595000513 | PROBABILITY AND RANDOM SIGNALS | 6 | Elem | 3 rd | D540 |
| 595000514 | BIG DATA PROGRAMMING | 6 | Comp | 3 rd | D230 |
| 595000515 | COMMUNICATION NETWORKS AND SERVICES | 6 | Comp | 3 rd | D230 |
| 595000516 | FUNDAMENTALS OF BUSINESS MANAGEMENT | 6 | Elem | 4 th | D400 |
| 595000517 | STATISTICAL INFERENCE AND TIME SERIES | 6 | Elem | 4 th | D540 |
| 595000518 | SENSOR NETWORKS | 6 | Comp | 4 th | D230 |
| 595000519 | INFORMATION THEORY | 6 | Comp | 4 th | D230 |
| 595000520 | COMMUNICATION SYSTEMS FOR DATA ENGINEERING | 3 | Comp | 4 th | D230 |
| 595000521 | WEB TECHNOLOGIES | 3 | Comp | 4 th | D230 |

THIRD YEAR

| CODE | COURSES | ECTS | TYPE | SEMESTER | DEPARTMENT CODE |
|-----------|--------------------------------------|------|------|-----------------|-----------------|
| 595000522 | SIGNAL ANALYSIS | 6 | Comp | 5 th | D250 |
| 595000523 | MACHINE LEARNING | 6 | Comp | 5 th | D230 |
| 595000524 | BIG DATA PROCESSING ARCHITECTURES | 6 | Comp | 5 th | D230 |
| 595000525 | CLOUD COMPUTING | 6 | Comp | 5 th | D230 |
| 595000526 | DATA ENGINEERING CAREER DEVELOPMENT | 3 | Comp | 5 th | D400 |
| 595000527 | ENTREPRENEURSHIP AND BUSINESS MODELS | 3 | Comp | 5 th | D400 |
| 595000528 | DATA AND VISUAL ANALYTICS | 6 | Comp | 6 th | D250 |
| 595000529 | DATA MARKET SECTOR APPLICATIONS | 6 | Comp | 6 th | D230 |
| 595000530 | CLOUD BIG DATA ENGINEERING | 6 | Comp | 6 th | D230 |
| 595000531 | DATA AND SIGNAL ADVANCED PROCESSING | 6 | Comp | 6 th | D250 |
| 595000532 | DECISION-MAKING SUPPORT TECHNOLOGIES | 6 | Comp | 6 th | D510 |

FORTH YEAR

| CODE | COURSES | ECTS | TYPE | SEMESTER | DEPARTMENT CODE |
|-----------|---------------------------------------|------|------|-----------------|-----------------|
| 595000533 | DATA AND SYSTEMS ENGINEERING PROJECTS | 9 | Comp | 7 th | D250 |
| 595000534 | CYBERSECURITY AND DATA PROTECTION | 6 | Comp | 7 th | D230 |
| 595000535 | PROJECT MANAGEMENT | 6 | Comp | 7 th | D400 |
| 595000536 | ETHICAL AND LEGAL FRAMEWORK | 3 | Comp | 7 th | D510 |
| | ELECTIVE SUBJECTS/INTERNSHIP CREDITS | 6 | Elec | 7 th | |
| | ELECTIVE SUBJECTS/INTERNSHIP CREDITS | 18 | Elec | 8 th | |
| 595000599 | FINAL DEGREE PROJECT | 12 | | 8 th | ALL |

ELECTIVE COURSES

Each student must pass at least 24 elective ECTS to complete the degree.

TYPE OF COURSES:

- "Elem" – Elementary.
- "Comp" – Compulsory.
- "Elec" – Elective.

DEPARTMENT CODES

- D230: Telematics and Electronic Engineering.
- D240: Linguistics Applied to Science and Technology.
- D250: Audiovisual and Communications Engineering
- D400: Organization Engineering, Business Management and Statistics.
- D510: Physical Electronics, Electrical Engineering and Applied Physics.
- D540: Mathematics Applied to Information and Communication Technologies.