

Master's degree program in Computer systems and technologies

as of 2020/2021 academic year

CURRICULUM

for graduated form educational degrees BSc and/or MSc in professional directions: 5.3. Communication and computer technics or 4.6. Informatics and computer science

II. PLAN OF STUDY

ECTS Subject code **T p CST SN**

- **T** – type of course: **B** for BEng, **M** for MEng
- **p** – for Plovdiv branch
- **CST** – Industrial Electronics
- **SN** – subsequent number of the subject

Lectures (L), Tutorials (Tut.), Labs (Lab.), Auditorium Total (AT), Self-Study (SS), Exam (E), Continuous Assessment (CA), Semester Project (SP), Semester Assignment (course work) (SA)

| No | SUBJECT | Semester Load | | | | | | Assessment | | | | ECTS code | ECTS credits |
|----|---------|---------------|------|------|----|----|-------|------------|----|----|----|-----------|--------------|
| | | L | Tut. | Lab. | AT | SS | Total | E | CA | SP | SA | | |

SEMESTER I (15 weeks + 3weeks exams)

| | | | | | | | | | | | | | |
|-------|---|-----|---|----|-----|-----|-----|---|---|---|---|---------|----|
| 1 | Computer vision | 30 | 0 | 15 | 45 | 105 | 150 | | 1 | | | MpCST01 | 5 |
| 2 | Natural language interfaces | 30 | 0 | 15 | 45 | 105 | 150 | 1 | | | | MpCST02 | 5 |
| 3 | Distributed systems and communication | 30 | 0 | 15 | 45 | 75 | 120 | 1 | | | | MpCST03 | 4 |
| 4 | Optional Subject – List 1 | 30 | 0 | 15 | 45 | 105 | 150 | 1 | | | | MpCST04 | 5 |
| 5 | Optional Subject – List 2 | 30 | 0 | 15 | 45 | 105 | 150 | | 1 | | 1 | MpCST05 | 5 |
| 6 | Optional Subject – List 3 | 30 | 0 | 15 | 45 | 75 | 120 | | 1 | | | MpCST06 | 4 |
| 7 | Projects (selected subject form semester 1 №№1-6) | 0 | 0 | 0 | 0 | 60 | 60 | | | 1 | | MpCST07 | 2 |
| TOTAL | | 180 | 0 | 90 | 270 | 630 | 900 | 3 | 3 | 1 | 1 | | 30 |

SEMESTER II (10 weeks + 8 weeks diploma project (incl. 3 w. exams)

| | | | | | | | | | | | | | |
|-------|------------------------------|----|---|----|-----|-----|-----|------------------------|---|--|---|---------|----|
| 8 | Distributed embedded systems | 30 | 0 | 15 | 45 | 105 | 150 | | 1 | | 1 | MpCST08 | 5 |
| 9 | VLSI design | 30 | 0 | 15 | 45 | 105 | 150 | 1 | | | | MpCST09 | 5 |
| 10 | Optional Subject – List 4 | 30 | 0 | 15 | 45 | 105 | 150 | 1 | | | | MpCST10 | 5 |
| 11 | Diploma project (11-18 w.) | | | | | 450 | 450 | Diploma thesis defence | | | | MpCST11 | 15 |
| TOTAL | | 90 | | 45 | 135 | 765 | 900 | 2 | 1 | | 1 | | 30 |

Note: *Diploma project is included in the semester 2 study time.

LIST OF ELECTIVE SUBJECTS

| List 1 (MpCST04 – ECTS 5) | | |
|----------------------------------|---|-----------|
| 1 | Programming of modern heterogeneous architecture | MpCST4.1 |
| 2 | Cybersecurity architecture | MpCST4.2 |
| 3 | Language processing | MpCST4.3 |
| List 2 (MpCST05 – ECTS 5) | | |
| 1 | Quantum algorithms | MpCST5.1 |
| 2 | Cryptography | MpCST5.2 |
| List 3 (MpCST06 – ECTS 4) | | |
| 1 | Systems for remote monitoring and control of spacecraft | MpCST6.1 |
| 2 | Security and Privacy on the Internet of Things | MpCST6.2 |
| List (MpCST10 – ECTS 5) | | |
| 1 | Pattern recognition algorithms and systems | MpCST10.1 |
| 2 | Virtual and Mixed Reality Technologies | MpCST10.2 |

LIST OF FACULTATIVE SUBJECTS

| No | SUBJECT | Semester Load | | | | | | Assessment | | | | ECTS code | ECTS credits |
|----|---------|---------------|------|------|----|----|-------|------------|----|----|----|-----------|--------------|
| | | L | Tut. | Lab. | AT | SS | Total | E | CA | SP | SA | | |

SEMESTER I

| | | | | | | | | | | | | | |
|---|-------------------------|----|---|----|----|----|----|--|---|--|--|-----------|---|
| 1 | Time series forecasting | 20 | 0 | 20 | 40 | 50 | 90 | | 1 | | | FaMpCST01 | 3 |
|---|-------------------------|----|---|----|----|----|----|--|---|--|--|-----------|---|

SEMESTER II

| | | | | | | | | | | | | | |
|---|--|----|---|----|----|----|----|--|---|--|--|-----------|---|
| 2 | Mathematical methods for digital signal processing | 20 | 0 | 20 | 40 | 50 | 90 | | 1 | | | FaMpCST02 | 3 |
|---|--|----|---|----|----|----|----|--|---|--|--|-----------|---|

Note:

1. The contents of the lists of optional courses and their names are subject to update before the start of the academic year.
2. The schedule of the facultative courses in accordance with the interests of the students will be announced by the faculty office.