

# CURRICULUM – 1st YEAR 2024-2025

|                               |                                                                                                    |                                                  |                                               |
|-------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------|
| <b>UNIVERSITY</b>             | <i>George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Târgu Mures</i> | <b>PROGRAMME OF STUDY</b>                        | Artificial Intelligence                       |
| <b>FACULTY</b>                | <i>Faculty of Engineering and Information Technologies</i>                                         | <b>TITLE AWARDED</b>                             | Master degree                                 |
| <b>FIELD OF STUDY</b>         | <i>Informatics</i>                                                                                 | <b>OFFICIAL LENGHT OF THE PROGRAMME OF STUDY</b> | 2 years                                       |
| <b>LEVEL OF QUALIFICATION</b> | 7                                                                                                  | <b>NUMBER OF ECTS/SECT CREDITS</b>               | 120 + 10 Preparation of the Disertation Paper |

| No.              | Educational activities<br>Courses                            | Code/<br>Type<br>Of courses | 1st semester            |     |      |                |                     |     |      |                | 2nd semester            |     |      |                |                      |     |      |                | Total academic year |     |                 |      |
|------------------|--------------------------------------------------------------|-----------------------------|-------------------------|-----|------|----------------|---------------------|-----|------|----------------|-------------------------|-----|------|----------------|----------------------|-----|------|----------------|---------------------|-----|-----------------|------|
|                  |                                                              |                             | 1st module (7 weeks)    |     |      |                | 2nd module(7 weeks) |     |      |                | 3rd module (7 weeks)    |     |      |                | 4th module (7 weeks) |     |      |                |                     |     |                 |      |
|                  |                                                              |                             | Cours                   | SLP | ECTS | Verif.<br>form | Cours               | SLP | ECTS | Verif.<br>form | Cours                   | SLP | ECTS | Verif.<br>form | Cours                | SLP | ECTS | Verif.<br>form | Cours               | SLP | Indiv.<br>stud. | ECTS |
| 1.               | Automatic learning                                           | MINA101/DA                  | 4                       | 2L  | 7    | E              |                     |     |      |                |                         |     |      |                |                      |     |      |                | 28                  | 14  | 133             | 7    |
| 2.               | Probabilities and statistics in medical systems              | MINA102/DS                  | 4                       | 4L  | 8    | E              |                     |     |      |                |                         |     |      |                |                      |     |      |                | 28                  | 28  | 144             | 8    |
| 3.               | Semantics and pragmatics of natural language                 | MINA103/DA                  |                         |     |      |                | 4                   | 4L  | 8    | E              |                         |     |      |                |                      |     |      |                | 28                  | 28  | 144             | 8    |
| 4.               | Research Methodology                                         | MINA104/DS                  |                         |     |      |                | 2                   | 4s  | 7    | E              |                         |     |      |                |                      |     |      |                | 14                  | 28  | 133             | 7    |
| 5.               | Data science using Python                                    | MINA105/DA                  |                         |     |      |                |                     |     |      |                | 4                       | 4L  | 7    | E              |                      |     |      |                | 28                  | 28  | 119             | 7    |
| 6.               | Artificial intelligence tools in the Cloud                   | MINA106/DA                  |                         |     |      |                |                     |     |      |                | 4                       | 2L  | 6    | E              |                      |     |      |                | 28                  | 14  | 108             | 6    |
| 7.               | Ethics and academic integrity                                | MINA107/DS                  |                         |     |      |                |                     |     |      |                | 2                       | 0   | 3    | E              |                      |     |      |                | 14                  | 0   | 61              | 3    |
| 8.               | Advanced methods for data analysis                           | MINA108/DA                  |                         |     |      |                |                     |     |      |                |                         |     |      |                | 4                    | 4L  | 7    | E              | 28                  | 28  | 119             | 7    |
| 9.               | Methods of biological inspiration in artificial intelligence | MINA109/DS                  |                         |     |      |                |                     |     |      |                |                         |     |      |                | 4                    | 2L  | 7    | E              | 28                  | 14  | 133             | 7    |
| GENERAL TOTAL    |                                                              | 9 Compulsory                | 8                       | 6   | 15   | 2E             | 6                   | 8   | 15   | 2E             | 10                      | 6   | 16   | 3E             | 8                    | 6   | 14   | 2E             | 224                 | 182 | 1094            | 60   |
| TOTAL HOURS/ECTS |                                                              |                             | 14 hours/week ; 30 ECTS |     |      |                |                     |     |      |                | 15 hours/week ; 30 ECTS |     |      |                |                      |     |      |                | 406                 |     |                 |      |

| Formative categories |                    | Activities             |  |  |  |
|----------------------|--------------------|------------------------|--|--|--|
| DF                   | Foundamental Cours | c Courses              |  |  |  |
| DD                   | Technical Course   | s Seminars             |  |  |  |
| DS                   | Specialized Course | lp Practical exercises |  |  |  |
| DC                   | Complementary Cour | p Project              |  |  |  |

## CURRICULUM – 2nd YEAR 2024-2025

|                               |                                                                                                    |                                                  |                                               |
|-------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------|
| <b>UNIVERSITY</b>             | <i>George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Târgu Mureș</i> | <b>PROGRAMME OF STUDY</b>                        | Artificial Intelligence                       |
| <b>FACULTY</b>                | <i>Faculty of Engineering and Information Technologies</i>                                         | <b>TITLE AWARDED</b>                             | Master degree                                 |
| <b>FIELD OF STUDY</b>         | <i>Informatics</i>                                                                                 | <b>OFFICIAL LENGHT OF THE PROGRAMME OF STUDY</b> | 2 years                                       |
| <b>LEVEL OF QUALIFICATION</b> | 7                                                                                                  | <b>NUMBER OF ECTS/SECT CREDITS</b>               | 120 + 10 Preparation of the Disertation Paper |

| No.              | Educational activities<br>Courses                        | Code/<br>Type<br>Of courses  | 1st semester            |     |      |                |                     |     |      |                | 2nd semester             |     |      |                |                   |     |      |                | Total academic year |     |                 |      |
|------------------|----------------------------------------------------------|------------------------------|-------------------------|-----|------|----------------|---------------------|-----|------|----------------|--------------------------|-----|------|----------------|-------------------|-----|------|----------------|---------------------|-----|-----------------|------|
|                  |                                                          |                              | 1st module (7 weeks)    |     |      |                | 2nd module(7 weeks) |     |      |                | 3rd module (7 weeks)     |     |      |                | Modul IV(7 weeks) |     |      |                |                     |     |                 |      |
|                  |                                                          |                              | Cours                   | SLP | ECTS | Verif.<br>form | Cou<br>rs           | SLP | ECTS | Verif.<br>form | Cours                    | SLP | ECTS | Verif.<br>form | Cours             | SLP | ECTS | Verif.<br>form | Cours               | SLP | Indiv.<br>stud. | ECTS |
| 1.               | Intelligent systems                                      | MINA201/DS                   | 4                       | 2L  | 7    | E              |                     |     |      |                |                          |     |      |                |                   |     |      |                | 28                  | 14  | 133             | 7    |
| 2.               | Artificial intelligence in image processing              | MINA202/DA                   | 4                       | 4lp | 8    | E              |                     |     |      |                |                          |     |      |                |                   |     |      |                | 28                  | 28  | 144             | 8    |
| 3.               | Neural computation                                       | MINA203/DA                   |                         |     |      |                | 4                   | 2l  | 7    | E              |                          |     |      |                |                   |     |      |                | 28                  | 14  | 133             | 7    |
| 4.               | Advanced Scientific Research leading to the Dissertation | MINA204/DA                   |                         |     |      |                |                     |     |      |                | 4                        | 2s  | 5    | C              |                   |     |      |                | 28                  | 14  | 83              | 5    |
| 5.               | Preparation of the Disertation Paper                     | MINA205/DA                   |                         |     |      |                |                     |     |      |                |                          | 5l  |      |                |                   | 5l  | 10   | C              | -                   | 70  | 180             | 10   |
| 6.               | On site Training                                         | MINA206/DA                   |                         |     |      |                |                     |     |      |                |                          | 5p  |      |                |                   | 5p  | 10   | C              | -                   | 70  | 180             | 10   |
| 7.               | Artificial intelligence in IT security systems           | MINA207/DS                   |                         |     |      |                | 4                   | 4l  | 8    | E              |                          |     |      |                |                   |     |      |                | 28                  | 28  | 144             | 8    |
| 8.               | IT entrepreneurship                                      | MINA208/DS                   |                         |     |      |                |                     |     |      |                | 4                        | 2l  | 5    | C              |                   |     |      |                | 28                  | 14  | 83              | 5    |
| GENERAL TOTAL    |                                                          | 6 Compulsory;<br>2 optional. | 8                       | 6   | 15   | 2E             | 8                   | 6   | 15   | 2E             | 8                        | 9+5 | 10   | 2C             |                   | 5+5 | 20   | 2C             | 168                 | 252 | 1080            | 60   |
| TOTAL HOURS/ECTS |                                                          |                              | 14 hours/week ; 30 ECTS |     |      |                |                     |     |      |                | 11+5 hours/week; 30 ECTS |     |      |                |                   |     |      |                | 728                 |     |                 |      |

| Formative categories |                    | Activities             |  |  |  |
|----------------------|--------------------|------------------------|--|--|--|
| DF                   | Foundamental Cours | c Courses              |  |  |  |
| DD                   | Technical Course   | s Seminars             |  |  |  |
| DS                   | Specialized Course | lp Practical exercises |  |  |  |
| DC                   | Complementary Cour | p Project              |  |  |  |